

**STATE OF MINNESOTA
BEFORE THE
MINNESOTA PUBLIC UTILITIES COMMISSION**

**Beverly Heydinger
J. Dennis O'Brien
David C. Boyd
Phyhs A. Reha
Betsy Wergin**

**Chair
Commissioner
Commissioner
Commissioner
Commissioner**

In the Matter of the Application
for a LEPGP Site Permit, a HVTL
Route Permit, and a Pipeline Route
Permit for the Mesaba IGCC
Generating Station Project

MPUC Docket No. E-6472/GS-06-668

COMMENT OF mncoalgasplant.com

Mncoalgasplant.com, Intervenor in multiple Excelsior Energy Mesaba Project dockets, submits this comment in response to the Commissions June 6, 2012 Notice. The Commission seeks comments on Excelsior Energy's request of May 21, 2012, and frames the issues as whether the Site and Route Permits are valid for the natural gas-fired generation facility now proposed at the same site, and Commission confirmation that no additional environmental review is required under state law.

Excelsior Energy is proponent of the Mesaba Project, a coal gasification that received extensive regulatory exemptions and benefits as a part of the 2003 Prairie Island legislation. At issue now is that Excelsior Energy proposes a natural gas plant at the same location, succeeded in passage last session of additional regulatory exemptions and benefits found in Minn. Stat. §216B.1694, Subd. 3:

216B.1694 INNOVATIVE ENERGY PROJECT.

Subd. 3. Staging and permitting.

(a) A natural gas-fired plant that is located on one site designated as an innovative energy project site under subdivision 1, clause (3), is accorded the regulatory incentives granted to an innovative energy project under subdivision 2, clauses (1) to (3), and may exercise the authorities therein.

(b) Following issuance of a final state or federal environmental impact statement for an innovative energy project that was a subject of contested case proceedings before an administrative law judge:

(1) site and route permits and water appropriation approvals for an innovative energy project must also be deemed valid for a plant meeting the requirements of paragraph (a) and shall remain valid until the earlier of (i) four years from the date the final required state or federal preconstruction permit is issued or (ii) June 30, 2019; and

(2) no air, water, or other permit issued by a state agency that is necessary for constructing an innovative energy project may be the subject of contested case hearings, notwithstanding Minnesota Rules, parts 7000.1750 to 7000.2200.

I. EXCELSIOR ENERGY MUST SUBMIT AN AMENDED APPLICATION FOR REVIEW AND DETERMINATION OF WHETHER THE MINN. STAT. §216b.1694, Subd. 3 APPLIES.

Excelsior Energy is seeking assurance, prior to filing an Air Permit application with the MPCA that no additional environmental review is required. Under the statute, a number of provisions are triggered, but before that analysis, the Excelsior Energy proposal needs some scrutiny. Excelsior Energy must submit an amended application to the Commission with sufficient detail to allow for determination of applicability of the statute.

First, what is proposed? We don't know. All we know is the information gleaned from the filings of May 31, 2012 and June 26, 2012. That's not enough.

Excelsior states:

Furthermore, because Excelsior is **simply planning to construct a subset of the Project** that will fit within the physical and environmental footprint and reduce the impacts relative to those examined in the Project's Final EIS, there would be no value to conducting additional environmental review **with the intention of revising** that document.

Excelsior Letter of May 31, 2012 (emphasis added).

The language used by Excelsior Energy raises question. First the use of the modifier “simply” is a red flag that it is anything but. Next comes “planning to construct a subset of the Project.” That has not been demonstrated by Excelsior, thus far all that has been provided is forward looking statements without substance. This project has a long history as a “vaporware” project, and there is no reason to presume that anything has changed. The Commission should exercise due diligence and require that Excelsior submit detailed plans in the form of an amended application, and review those plans sufficient to verify that it indeed is a “subset of the Project.” Reviewal of plans is necessary to verify Excelsior’s plan.

Excelsior goes on to state:

Excelsior would plan to construct the gasification if and when it becomes feasible to do so from economic and regulatory standpoints.

Excelsior Letter of June 26, 2012, p. 1 (emphasis added). In that letter, Excelsior Energy attached a “Matrix Table Identifying Differences between IGCC and NGCC.” This chart is so devoid of substantive information that it is worthless, i.e., CTG/HRST with no identification of specifics, as with each other “Major process equipment” line item. See Affidavit of Ron Rich, attached as Exhibit A:

I have reviewed the filings of Excelsior Energy regarding confirmation from the Commission regarding Minn. Stat. §2168.1694, Subd.3 including whether the proposed plant is truly "innovative" and compatible with the coal gasification island and thus can only rely on the overly favorable emission estimates provided by Excelsior Energy (EE) or whether the actual emissions from the many similar standard NGCC facilities located throughout the U.S. should be considered instead - requiring additional environmental review to more accurately assess the plant's impact. More information is needed about the specific components beyond simple identification of "Major process equipment" such as "CTG/HRSG" or "cooling towers" to determine what emissions standards are appropriate.

Exhibit A, Affidavit of Ron Rich, p. 1.

Explaining the differences between its “plan” for a a natural gas plant and IGCC,

Excelsior Energy states:

Minn. Statute 1694.216B, Subd. 3 (sic) does not contemplate any comparison of the integrated gasification combined cycle (“IGCC”) and natural-gas fired plant in order to deem the site and route permits valid for a natural-gas fired plant. ... NGCC specifications are conservative estimates as explained in the footnotes to the table.

Id., p. 2.

Again, the wording is suspect. Excelsior’s use of “would plan” is very tentative. The “coal gasification island” is the meat of this “innovative energy project” that was given the legislative exemptions and benefits. If this natural gas plant, as proposed, is not a step towards an “innovative energy project,” then the Innovative Energy Project statute is not applicable.

Minn. Stat. 216B.1694. Costs for an IGCC compatible natural gas power unit are higher than a typical natural gas plant. Again, we don’t know what Excelsior Energy is proposing -- it must disclose precisely what is proposed.

At the very least, the NGCC plant design EE proposes should be presented to the Commission as an amended application so that IGCC compatible design and actual air emission information from similar NGCC designs can be determined. The types and quantities of such actual air emissions will be significantly different, and almost certainly greater, than the air emissions EE has assumed

In addition to comparing IGCC compatible and actual comparable NGCC emissions, the application should contain an itemized NGCC facility cost and emission estimate, indicating proposed equipment vendors, actual unit air emissions, and an emissions data reference to assist the Commission in determining more accurate air emissions estimates and whether the statutory provisions for an "innovative" energy project still apply.

Exhibit A, Affidavit of Ron Rich, p.2, para.12-13.

This requires an amended application, with information sufficient to determine, with certainty, that the natural gas plant proposed is one that could be converted to an IGCC plant.

Excelsior Energy is cannot avail itself of the regulatory perks of Minn. Stat. 216B.1694 until the

Commission has thoroughly reviewed Excelsior’s plans. After review of Excelsior’s statements, Ron Rich, a professional in the industry, states that they are not indicative of a “shovel ready” or “permit ready” “plan.”

I have concluded there is nothing unique or innovative about the NGCC plant EE proposes. All the technologies EE proposes are typical for current NGCC plants. There is nothing indicating that what EE proposes is IGCC compatible.

Exhibit A, Affidavit of Ron Rich, p.2, para.5.

If Excelsior Energy actually intends to apply for an air permit and construct a natural gas plant that is a “subset” of a coal gasification plant, it will have to develop that information as part of an air permit application, with costs, equipment and configurations specified. The Commission should require Excelsior Energy submit an amended application, based on the Air Permit application, for review and verification, basic due diligence on the part of the Commission.

II. EXCELSIOR ENERGY MUST DEMONSTRATE THAT A COAL GASIFICATION ISLAND CAN BE ADDED TO THE NATURAL GAS PLANT

Excelsior Energy has not demonstrated that its proposed natural gas plant is compatible with coal gasification plant design.

EE implies that in the future an IGCC gasification island can be added to the NGCC plant they propose. If so, the gas turbine and steam burner design would have to be designed at the outset to accommodate IGCC syngas containing carbon monoxide and hydrogen as well as natural gas. This compromise design requirement would increase both plant cost and overall air emissions, except for NO_x, compared with current NGCC plant practice. Reasonable cost estimates for this dual function design requirement must be disclosed. Such additional cost would by itself make the EE plant uneconomic. If EE does not plan to utilize a design that can accommodate IGCC syngas as well as natural gas, this should be disclosed at the outset. A later conversion to an IGCC plant is not viable and EE should so state.

Exhibit A, Affidavit of Ron Rich, p.2, para.11.

A discreet part of the Application, and review of the Application, requires a

determination that the project is indeed part of coal gasification plant, whether it is compatible with a coal gasification, and whether it is a step toward an “innovative energy project.” The Commission must make the determination of compatibility.

III. EXCELSIOR ENERGY MUST PROVIDE A POWER PURCHASE AGREEMENT FOR REVIEW

An entire docket and several years were devoted to Excelsior Energy’s attempt to require Xcel Energy sign a power purchase agreement for the IGCC plant. Excelsior Energy has not disclosed the costs for this plant it is proposing. The Commission determination in the IGCC docket was that coal gasification as proposed by Excelsior Energy was not a least cost option, and in fact was excessively priced.

There is no known or disclosed Power Purchase Agreement for the energy generated by this natural gas plant.

EE should also provide a power purchase agreement demonstrating a market for the energy they want to produce and a reasonable probability of financial return. This is particularly important since EE has been unsuccessful in obtaining such an agreement in the past and because EE appears to propose nothing innovative to distinguish its project from the hundreds of NGCC plants constructed in the last 20 years.

Exhibit A, Affidavit of Ron Rich, p.2, para.12.

What components are different for a natural gas plant compatible with coal gasification? Is a coal gasification compatible natural gas plant cost comparable with a typical natural gas plant? The Commission will have to determine the answers to these cost questions prior to a determination that the statute is applicable to Excelsior Energy’s proposed project.

IV. EXCELSIOR ENERGY’S DOE ASSISTANCE IS NOT APPLICABLE TO NATURAL GAS UNITS

As a part of its due diligence, the Commission should review the costs of this project as well as the DOE financial documents that are a part of the Power Purchase Agreement case¹. This lack of support could have an impact on whether the price of the natural gas generation would be reasonable. Exhibit B, DOE EIS responses to Comments by Linda Castagneri and Ron Gustafson.

The Cooperative Agreement does stipulate that DOE is not willing to share in the acquisition costs of any fuel other than coal, unless proper written approval is obtained from the DOE Contracting Officer.

Exhibit B, DOE EIS responses to Comments by Linda Castagneri and Ron Gustafson. Excelsior Energy and the DOE executed a Notice of Financial Assistance Award, entered into the record in the Power Purchase Agreement Docket.. Attached Exhibit C, DOE Notice of Financial Assistance.

The Commission should also investigate whether approval to utilize solely natural gas is being pursued by Excelsior Energy.

V. EXCELSIOR ENERGY DOES NOT QUALIFY FOR REGULATORY RELIEF BECAUSE ENVIRONMENTAL REVIEW HAS NOT BEEN COMPLETED.

The Mesaba Project does not qualify for special treatment under 216B.1694, Subd. 3 because environmental review is not completed. Minn. Stat. §216B.1694, Subd. 3(b). Environmental review is not complete until the DOE issues a Record of Decision (ROD). It is still on the schedule of pending environmental review, attached as Exhibit D, noting “ROD Schedule Uncertain.” Environmental review is not complete.

Further, there are environmental issues that Excelsior Energy has not addressed. Regarding the natural gas plant:

To obtain the benefits of increased efficiency that traditional NGCC provides, NOx

¹ PUC Docket E-6472/PA-05-1993.

emissions are higher than EE estimates. The "Low-NOx" burners EE proposes lowers plant efficiency and increases power generation cost and emissions of other pollutants. EE's appears to have simply and inaccurately taken their previous IGCC emissions estimates and reduced them - not valid if natural gas is the sole fuel used.

EE seems to accept that high NOx emissions will result because they require the use of a SCR system to reduce the high values they anticipate. SCRs require ammonia (NH₃) to operate and a portion of that ammonia "slips" through the SCR as an additional hazardous air emission that EE appears to ignore - nowhere is it accounted for. Also, the catalysts used in SCRs often require replacement, and as they age more and more NOx is emitted. EE ignores these additional NGCC emissions concerns.

EE ignores completely the emissions of methane (CH₄), every potent greenhouse gas, as well as the other unburned natural gas hydrocarbons that would result from a natural gas only fueled power plant. Such on-premises emissions come from pipe, valve and seal leaks, plant startup and shutdown, and accidents. Such off-premises emissions come from natural gas drilling, extraction, and pipeline leaks. These emissions would be significantly increased compared with the IGCC facility they proposed earlier because NGCC plant relies solely on natural gas for fuel- not just for startup and "backup".

Exhibit A, Affidavit of Ron Rich, p. 2, para. 7-9.

Additionally, there are additional environmental impacts not considered if the project is solely fueled by natural gas:

EE does not mention or consider any environmental impacts from the new natural gas pipeline that would have to be built solely to supply their proposed NGCC plant(s). The previously permitted pipeline was designed to supply EE's IGCC plant as well as Essar's taconite/steel mill and additional natural gas capacity for Nashwauk, Minnesota's future industrial development. However, Essar (and Nashwauk) have already selected another gas source and stopped pursuing the permitted pipeline. Any gas pipeline built for EE now will not conform to the previous pipeline permit information and assumptions. A new pipeline permit would be required. And an EE only pipeline will be much more expensive for EE alone to construct - further reducing EE's NGCC plant economic viability.

Exhibit A, Affidavit of Ron Rich, p. 2, para. 10.

The Commission must investigate the status DOE environmental review – a determination regarding necessity of environmental review under Minn. Stat. §216B.1694, Subd. 3, is premature when DOE's environmental review Record of Decision is pending.

VI. THE COMMISSION MUST EXERCISE DUE DILIGENCE BEFORE ANY DETERMINATIONS ARE MADE REGARDING EXCELSIOR'S REQUESTS

Excelsior Energy has requested that the Commission confirm that the site and route permits issued in March 2010 are deemed valid for a natural gas plant at the same site, and that no additional environmental review is required. The Commission must exercise due diligence in making any determination regarding Excelsior Energy's proposal. Excelsior Energy must submit an amended application for review and determination of whether Minn. Stat. §216b.1694, Subd. 3 applies to this project. Excelsior Energy must demonstrate that a coal gasification island can be added to the natural gas plant. Excelsior Energy must disclose costs of this project and provide a power purchase agreement for review. Further, the Commission should consider that Excelsior Energy's DOE assistance is not applicable to natural gas units. Lastly, Excelsior Energy does not qualify for regulatory relief because environmental review has not been completed.

June 29, 2012



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Exhibit A

Affidavit of Ron Rich
Atmosphere Recovery, Inc.

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Generating Station Project

MPUC Docket No. E-6472/GS-06-668

AFFIDAVIT OF RONALD R. RICH

STATE OF MINNESOTA)
) ss.
COUNTY OF HENNEPIN)

Ronald R. Rich, after being duly sworn on oath, states and deposes as follows:

1. My name is Ronald R. Rich, and I am President of Atmosphere Recovery, Inc., located at 7632 Washington Avenue South, Eden Prairie, MN 55344.
2. I am filing this Affidavit on behalf of mncoalgasplant.com and Citizens Against the Mesaba Project, interveners and participants in the many dockets regarding Excelsior Energy's Mesaba Project.
3. As an expert in air emissions, I have knowledge of coal gasification and natural gas plant design that raises important issues that the Commission should consider.
4. I have reviewed the filings of Excelsior Energy regarding confirmation from the Commission regarding Minn. Stat. §216B.1694, Subd. 3 including whether the proposed plant is truly "innovative" and compatible with the coal gasification island and thus can only rely on the overly favorable emission estimates provided by Excelsior Energy (EE) or whether the actual emissions from the many similar standard NGCC facilities located throughout the U.S. should be considered instead – requiring additional environmental

review to more accurately assess the plant's impact. More information is needed about the specific components beyond simple identification of "Major process equipment" such as "CTG/HRSG" or "cooling towers" to determine what emissions standards are appropriate.

5. I have concluded there is nothing unique or innovative about the NGCC plant EE proposes. All the technologies EE proposes are typical for current NGCC plants. There is nothing indicating that what EE proposes is IGCC compatible.
6. EE's recent response to the June 8th Department of Commerce comments indicates that EE does not seem to consider that between 1990 and 2007, over 168,000 MW of NGCC capacity was built at 345 plant sites - many in Minnesota from which actual air emission data can be obtained for this type of plant.
7. To obtain the benefits of increased efficiency that traditional NGCC provides, NO_x emissions are higher than EE estimates. The "Low-NO_x" burners EE proposes lowers plant efficiency and increases power generation cost and emissions of other pollutants. EE's appears to have simply and inaccurately taken their previous IGCC emissions estimates and reduced them – not valid if natural gas is the sole fuel used.
8. EE seems to accept that high NO_x emissions will result because they require the use of a SCR system to reduce the high values they anticipate. SCRs require ammonia (NH₃) to operate and a portion of that ammonia "slips" through the SCR as an additional hazardous air emission that EE appears to ignore – nowhere is it accounted for. Also, the catalysts used in SCRs often require replacement, and as they age more and more NO_x is emitted. EE ignores these additional NGCC emissions concerns.
9. EE ignores completely the emissions of methane (CH₄), a very potent greenhouse gas, as well as the other unburned natural gas hydrocarbons that would result from a natural gas only fueled power plant. Such on-premises emissions come from pipe, valve and seal leaks, plant startup and shutdown, and accidents. Such off-premises emissions come from natural gas drilling, extraction, and pipeline leaks. These emissions would be significantly increased compared with the IGCC facility they proposed earlier because NGCC plant relies solely on natural gas for fuel – not just for startup and "backup".
10. EE does not mention or consider any environmental impacts from the new natural gas pipeline that would have to be built solely to supply their proposed NGCC plant(s). The previously permitted pipeline was designed to supply EE's IGCC plant as well as Essar's taconite/steel mill and additional natural gas capacity for Nashwauk, Minnesota's future industrial development. However, Essar (and Nashwauk) have already selected another gas source and stopped pursuing the permitted pipeline. Any gas pipeline built for EE now will not conform to the previous pipeline permit information and assumptions. A new pipeline permit would be required. And an EE only pipeline will be much more expensive for EE alone to construct – further reducing EE's NGCC plant economic viability.
11. EE implies that in the future an IGCC gasification island can be added to the NGCC plant they propose. If so, the gas turbine and steam burner design would have to be designed at

the outset to accommodate IGCC syngas containing carbon monoxide and hydrogen as well as natural gas. This compromise design requirement would increase both plant cost and overall air emissions, except for NOx, compared with current NGCC plant practice. Reasonable cost estimates for this dual function design requirement must be disclosed. Such additional cost would by itself make the EE plant uneconomic. If EE does not plan to utilize a design that can accommodate IGCC syngas as well as natural gas, this should be disclosed at the outset. A later conversion to an IGCC plant is not viable and EE should so state.

12. At the very least, the NGCC plant design EE proposes should be presented to the Commission as an amended application so that IGCC compatible design and actual air emission information from similar NGCC designs can be determined. The types and quantities of such actual air emissions will be significantly different, and almost certainly greater, than the air emissions EE has assumed.
13. In addition to comparing IGCC compatible and actual comparable NGCC emissions, the application should contain an itemized NGCC facility cost and emission estimate, indicating proposed equipment vendors, actual unit air emissions, and an emissions data reference to assist the Commission in determining more accurate air emissions estimates and whether the statutory provisions for an "innovative" energy project still apply.
14. EE should also provide a power purchase agreement demonstrating a market for the energy they want to produce and a reasonable probability of financial return. This is particularly important since EE has been unsuccessful in obtaining such an agreement in the past and because EE appears to propose nothing innovative to distinguish its project from the hundreds of NGCC plants constructed in the last 20 years.

Further your affiant sayeth naught.


Ronald R. Rich

Signed and sworn to before me this
27th day of June, 2012.


Notary Public

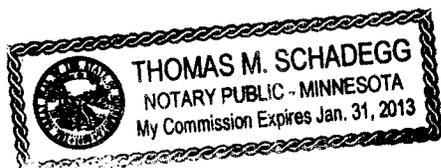


Exhibit B

DOE FEIS Comments of Castagneri and Gustafson

Commenter 53 – Ron Gustafson and Linda Castagneri

January 8, 2008

Richard A. Hargis
U.S. DOE/NETL
PO BOX 10940
Pittsburgh, PA 15236-0940

Subject: Comments and Questions – DOE Draft EIS for the Mesaba Energy Project (DOE/EIS-0382D)

I am requesting the following comments and questions be included in the record regarding the draft EIS for the proposed IGCC demonstration plant to be sited in Taconite Minnesota.

Chapter 5 Summary of Environmental Consequences

5.1.2 Impacts of Commercial Operation

"If fuel needs of the combined-cycle unit need to be met or supplemented by natural gas for continual operation then the demonstration of synthesis gas production by coal gasification would be considered unsuccessful."

53-01

How is this measured and by whom?

What process is used to monitor and determine whether the volume of natural gas used is to be considered successful or unsuccessful?

I am requesting clarification of the Cooperative Agreement and the Draft EIS and how the two documents are interrelated and how all items regarding use of natural gas will be measured as appropriate under said agreements.

*2.9 of the Cooperative Agreement – Cost Sharing – (Mar 2002)
Unallowable costs – DOE will not share in the acquisition costs of any fuel other than coal, under this Clean Coal Power Initiative, unless prior written approval is obtained from the DOE Contracting Officer*

53-02

The Minnesota Public Utilities Commission has determined the Mesaba Energy Project is not in the best interest of the public due to its high cost of electricity.

What is the impact to rate payers if the demonstration is unsuccessful?

If the project is determined to be unsuccessful how does it impact the Federal Government Loan Guarantees?

Solid Waste Disposal

53-03

What is the specific location of the "appropriate commercial landfill" to dispose of unmarketable sulfur and or slag?

Responses

Comment 53-01

The DOE Cooperative Agreement calls for a 1-year operational demonstration period under the CCPI Program. MEP-I, LLC, a project company of Excelsior Energy, would be responsible for developing a demonstration test plan, prior to the operational demonstration period, executing the test plan, and providing formal reporting of progress relative to executing the demonstration test plan to DOE. DOE would be responsible for review and approval of the demonstration test plan to ensure that the demonstration test program is adequate for evaluating performance against programmatic success criteria, and for monitoring the Recipient's progress relative to the demonstration test plan. There is no quantitative measure for the volume of natural gas that would constitute a threshold for determining project success. It is expected—and is not outside the realm of normal commercial practice—that natural gas would be considered and used for plant processes outside of continual operations; specifically, initial plant start-up, restart following downtime for routine maintenance, or as a result of process upsets. Otherwise, the gasification process is expected to produce syngas from coal as the principal fuel. DOE programmatic objectives include demonstrating the commercial readiness of clean coal technologies. This does not preclude the consideration of accepted commercial practices such as availability of an alternative/back-up fuel for the purposes identified above. Therefore, use of natural gas solely for the purposes identified above will not in of themselves result in an unsuccessful demonstration. The Cooperative Agreement does stipulate that DOE will not share in the acquisition costs of any fuel other than coal, unless prior written approval is obtained from the DOE Contracting Officer. The Recipient is required to provide information to DOE that supports all costs submitted for DOE cost-sharing. DOE also reserves the right to have the Recipient's costs audited by DCAA.

Comment 53-02

A quantitative assessment of the impact to rate payers in the event the demonstration is unsuccessful would depend on factors that are as yet undetermined. The Minnesota Public Utilities Commission has not approved any power purchase agreement or agreements, which would contain provisions that would determine the impact to rate payers. An unsuccessful demonstration could result in one of multiple possible outcomes, including long-term commercial operation using a fuel other than coal, application of lessons learned from an unsuccessful demonstration leading to the subsequent long-term commercial operation using coal as the primary fuel, or failure to operate the plant on a commercial basis.

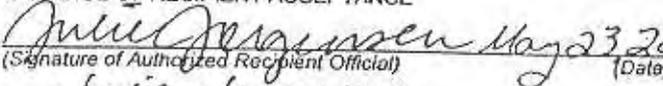
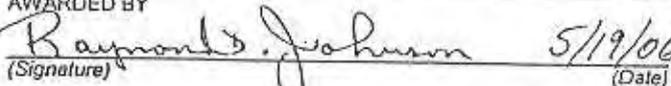
Exhibit C

DOE Notice of Financial Assistance

NOTICE OF FINANCIAL ASSISTANCE AWARD

Privileged or Confidential

Information Redacted

| | | | |
|---|-----|--|---|
| 1. PROJECT TITLE MESABA ENERGY PROJECT - UNIT 1 | | 2. INSTRUMENT TYPE <input type="checkbox"/> GRANT <input checked="" type="checkbox"/> COOPERATIVE AGREEMENT | |
| 3. RECIPIENT (Name, address, zip code) MEP-I LLC 11100 Wayzata Boulevard, Suite 305 Minnetonka, Minnesota 55305 | | 4. INSTRUMENT NO. DE-FC26-06NT42385 | 5. AMENDMENT NO. A000 |
| 8. RECIPIENT PROJECT DIRECTOR (Name, phone and E-mail) Jim Milkovich jimilkovich@excelsiorenery.com 952/847-2371 FAX: 2373 | | 6. BUDGET PERIOD FROM: 6/1/06 THRU: 4/28/08 | 7. PROJECT PERIOD FROM: 6/1/06 THRU: 2/28/13 |
| 9. RECIPIENT BUSINESS OFFICER (Name, phone and E-mail) Renee J. Sass reneesass@excelsiorenery.com 952/847-2363 FAX: 2373 | | 10. TYPE OF AWARD <input checked="" type="checkbox"/> NEW <input type="checkbox"/> CONTINUATION <input type="checkbox"/> RENEWAL <input type="checkbox"/> REVISION <input type="checkbox"/> INCREMENTAL FUNDING | |
| 11. DOE PROJECT OFFICER (Name, address, phone and E-mail) National Energy Technology Laboratory ATTN: Jason T. Lewis jason.lewis@netl.doe.gov 3610 Collins Ferry Road, P. O. Box 880 Morgantown, WV 26507-0880 304/285-4724 FAX: 4403 or 4469 | | 12. ADMINISTERED FOR DOE BY (Name, address, phone and E-mail) National Energy Technology Laboratory ATTN: William R. Mundorf william.mundorf@netl.doe.gov 626 Cochran Mill Road, P. O. Box 10940 Pittsburgh, PA 15236-0940 412/386-4483 FAX: 6137 | |
| 13. RECIPIENT TYPE <input type="checkbox"/> STATE GOV'T <input type="checkbox"/> INDIAN TRIBAL GOV'T <input type="checkbox"/> HOSPITAL <input checked="" type="checkbox"/> FOR PROFIT ORGANIZATION <input type="checkbox"/> INDIVIDUAL <input type="checkbox"/> LOCAL GOV'T <input type="checkbox"/> INSTITUTION OF HIGHER EDUCATION <input type="checkbox"/> OTHER NONPROFIT ORGANIZATION <input checked="" type="checkbox"/> C <input type="checkbox"/> P <input type="checkbox"/> SP <input type="checkbox"/> OTHER (Specify) | | | |
| 14. ACCOUNTING AND APPROPRIATIONS DATA: 150 2005 31 220322 61000000 25500 1610353 | | 15. EMPLOYER I.D. NUMBER a. TIN: 41-2019511 b. OUNS: 14-626-2915 | |
| 16. BUDGET AND FUNDING INFORMATION | | | |
| a. CURRENT BUDGET PERIOD INFORMATION | | b. CUMULATIVE DOE OBLIGATIONS | |
| (1) DOE Funds Obligated This Action | \$. | (1) This Budget Period | \$. |
| (2) DOE Funds Authorized for Carry Over | \$. | [Total of lines a.(1) and a.(3)] | \$. |
| (3) DOE Funds Previously Obligated in this Budget Period | \$. | (2) Prior Budget Periods | \$. |
| (4) DOE Share of Total Approved Budget | \$. | (3) Project Period to Date | \$. |
| (5) Recipient Share of Total Approved Budget | \$. | [Total of lines b.(1) and b.(2)] | \$. |
| (6) Total Approved Budget | \$. | | |
| 17. TOTAL ESTIMATED COST OF PROJECT, INCLUDING DOE FUNDS TO FFRDC: \$ 2,155,680,783 (This is the current estimated cost of the project. It is not a promise to award nor an authorization to expend funds in this amount.) | | | |
| 18. AWARD AGREEMENT TERMS AND CONDITIONS This award/agreement consists of this form plus the following: a. Special terms and conditions. b. Applicable program regulations (specify) _____ (Date) _____ c. DOE Assistance Regulations, 10 CFR Part 600 at http://ecfr.gpoaccess.gov or, if the award is a grant to a Federal Demonstration Partnership (FDP) institution, the FDP Terms & Conditions and the DOE FDP Agency Specific Requirements at http://www.nsf.gov/awards/managing/fed_dem_part.jsp . d. Application/proposal dated 6/14/04 with changes as agreed to by DOE and the Recipient. e. National Policy Assurances to be incorporated as Award Terms at http://grants.pr.doe.gov . | | | |
| 19. REMARKS This cooperative agreement is subject to the general terms and conditions contained herein. | | | |
| 20. EVIDENCE OF RECIPIENT ACCEPTANCE | | 21. AWARDED BY | |
|  (Signature of Authorized Recipient Official) _____ (Date) _____ Julie Dorgensen (Name) Co-President and CEO (Title) | |  (Signature) _____ (Date) _____ Raymond D. Johnson (Name) Contracting Officer (Title) | |

SECTION II - SPECIAL TERMS AND CONDITIONS

2.1 Prevailing Regulations (SEPT 2004)

As indicated on the face page, Block 18c, this award is subject to the DOE Assistance Regulations of Title 10, Code of Federal Regulations, Part 600. This set of regulations may be found in most major libraries or on the World Wide Web at: <http://ecfr.gpoaccess.gov>.

2.2 Order of Precedence (AUG 2001)

In the event of any inconsistency among the provisions of this agreement, the inconsistency shall be resolved by giving precedence as follows: (a) applicable public laws; (b) 10 CFR Part 600; (c) the special terms and conditions; and (d) other documents, exhibits and attachments.

2.3 Definitions (MAR 2002)

"Cooperative Agreement" means this agreement between the United States Department of Energy (DOE) and the Recipient, DOE Instrument number DE-FC26-06NT42385, and any subsequent amendments.

"Recipient" means MEP-I LLC and its successors and assigns.

"Repayment Agreement" means the agreement made by MEP-I, LLC in DOE Instrument Number DE-FR26-06NT42386, to repay the DOE share of costs paid under this Cooperative Agreement.

"United States" means the United States of America and its 50 States, the District of Columbia, the Commonwealth of Puerto Rico, and any possession or trust territory of the United States.

2.4 Statement of Substantial Involvement (OCT 2004)

a. Recipient's Responsibilities

The Recipient is responsible for:

- i. Performing the activities supported by this award, including providing the required personnel, facilities, equipment, supplies and services;
- ii. Defining approaches and plans, submitting the plans to DOE for review, and incorporating DOE comments;
- iii. Managing and conducting the project activities;
- iv. Attending semiannual program review meetings and reporting project status;
- v. Submitting technical reports and incorporating DOE comments; and,
- vi. Presenting the project results at appropriate technical conferences or meetings as directed by the DOE Project Officer (number of conferences/meetings will not exceed two per year).

b. DOE Responsibilities

DOE is responsible for:

- i. Reviewing in a timely manner project plans, including technology transfer/commercialization plans and operational demonstration test plans, and recommending alternate approaches if the plans do not address critical programmatic issues;

| | | | |
|------------------|----|--------------------------|-------------------|
| DOE Share: | \$ | 0 | 0.0% |
| Recipient Share: | \$ | 2,054,826,915 | 100.0% |
| TOTAL | | 2,054,826,915 | |

Budget Period #3

Demonstration/Operation Phase

| | | | |
|------------------|----|-----------------------|------------------|
| DOE Share: | \$ | 13,754,495 | 24.5% |
| Recipient Share: | \$ | 42,608,363 | 75.5% |
| TOTAL | | 56,362,858 | |

Total Estimated Cost

| | | | |
|------------------|----|--------------------------|------------------|
| DOE Share: | \$ | 36,000,000 | 1.7% |
| Recipient Share: | \$ | 2,119,680,783 | 98.3% |
| TOTAL | | 2,155,680,783 | |

(C) Budget Revisions

The Recipient may rebudget funds within a total approved budget, subject to the prior approval requirements of 10 CFR 600.315. The Recipient shall obtain prior written approval of the DOE Contracting Officer of any budget revision which would result in the need for additional DOE funding.

(D) Additional Funds

(1) The Recipient shall immediately notify the Contracting Officer in writing whenever it becomes apparent that the costs of completing that portion of the Project, to be performed during a Budget Period, exceeds the Total Approved Budget. Such written notice shall, at a minimum, set forth (1) a detailed explanation of the magnitude and factors causing the cost overrun; (2) a proposed Budget revision detailing the amount of additional funds needed to complete the Project and (3) the amount of additional DOE funds, if any, requested by the Recipient.

(2) Notwithstanding subparagraph (D)(1), if Recipient identifies additional scope, beyond that contemplated at cooperative agreement closing, which is necessary for the satisfactory completion of Budget Period 1 activities, Recipient may request a reallocation from Budget Period 3 to Budget Period 1 of not more than \$5 million in DOE funds. Such request shall not be considered a request for overrun funding. In support of its request, Recipient shall provide:

- A revision to the statement of project objectives for the additional scope.
- An explanation of why the additional scope is necessary for the satisfactory completion of Budget Period 1 activities.
- A budget for the additional scope at the same level of detail required for award of the cooperative agreement.
- A schedule for completion of the additional scope.
- A funding plan identifying the source(s) of Recipient cost-share for the additional scope including commitment letters for any third party cash or in-kind contributions.
- To the extent that any portion of the additional scope will be performed by anyone other than the recipient, including state, county, or municipal governments, copies of proposed subcontracts or other agreements for performance of the additional scope incorporating mandatory flow-down provisions from the cooperative agreement.

If DOE agrees that the additional scope is necessary for satisfactory completion of Budget Period 1 activities, the proposed costs are consistent with the terms of the cooperative agreement and applicable cost principles and the recipient has secured firm commitments to fund the private sector share of the additional scope, the

cooperative agreement will be modified to incorporate the additional scope. Such additional scope shall be shared at the cost-share ratio established for Budget Period 1. Recipient shall be required to provide additional cost-sharing in Budget Period 3 equal to the amount of DOE funds reallocated to Budget Period 1.

2.6 Conclusion of Project at completion of Budget Period 1

DOE will not seek adjustment of the cost sharing in the event the project does not proceed beyond preliminary design.

2.7 Cost Overruns (OCT 2003)

The Government is under no obligation to share any cost overruns (i.e., costs incurred during the Demonstration Project that are more than those estimated at the date of award). DOE does not plan to set-aside funds for overruns. However, if appropriated funds are available in the future for supporting overruns, the Government's share of overruns will not exceed the Government's percentage cost share for the overall project and then only up to 25 percent of the original Government contribution as specified in the initial Cooperative Agreement.

2.8 Allowable Pre-award Costs (MAR 1999)

The Recipient is entitled to reimbursement of pre-award costs in the amount not to exceed \$9,000,000 of DOE obligations. These costs are limited to work associated with performance of work detailed in Recipient letter of November 29, 2004, incurred during the period starting on November 19, 2004 through the effective start date of this award (Block 7, DOE F 4600.1).

2.9 Cost Sharing (MAR 2002)

Cost sharing ratios may vary between budget periods but not within a budget period. In order to be recognized as allowable cost sharing, a cost must be otherwise allowable in accordance with the applicable Federal cost principles and DOE Regulations (10CFR600.313) governing cost sharing. Cost sharing may be in various forms or combinations, which includes but is not limited to cash outlays and in-kind contributions. All allowable project costs, whether in-cash or in-kind, shall be shared by DOE when such costs are incurred by applying the share ratios set forth in the Cooperative Agreement.

Provided below is a non-exclusive list of costs that are unallowable as project costs and cost sharing:

- X Costs incurred in negotiating a Cooperative Agreement with DOE are not allowable as direct charges to the project.
- X Allowable costs under past, present, or future Federal Government contracts, grants or Cooperative Agreements may not be charged against this Cooperative Agreement. Likewise, the Recipient may not charge costs allowable under this project, including any portion of its cost share to the Federal Government under any other contracts, grants, or Cooperative Agreements.
- X The day-to-day operating costs of the demonstration site will not be recognized as an allowable cost for cost sharing purposes. Only the operating costs directly associated with the proposed work effort (i.e., incremental costs distinct from the daily operational costs) may be recognized as allowable costs for cost-sharing purposes if adequately supported and properly documented.
- X DOE will not share in the acquisition costs of any fuel other than coal, under this Clean Coal Power Initiative, unless prior written approval is obtained from the DOE Contracting Officer.
- X Previously expended research or development costs are unallowable.

- X DOE shall not accept valuation for property sold, transferred, exchanged, or manipulated in any way to acquire a new basis for depreciation purposes or to establish a fair use value in circumstances that would amount to a transaction for the purpose of the Cooperative Agreement.
- X Interest on borrowings (however represented) and other financial costs such as bond discounts, cost of financing and refinancing capital (net worth plus long-term liabilities), are unallowable project costs. This includes interest on funds borrowed for construction.
- X DOE will not share in both the direct cost and depreciation on the same item. Depreciation is not allowable for cost sharing on any item charged to the project as a direct cost. For example, DOE will cost share the direct cost on equipment or facilities purchased or constructed for the project; but, will not also cost share the depreciation.
- X The value of patents and data contributed to the project is unallowable.
- X Facilities capital cost of money shall be an unallowable cost on all real property or equipment acquired by or on behalf of the Recipient in connection with the performance of the project.
- X Forgone fees, forgone profits, or forgone revenues as well as replacement power costs are not allowable costs.
- X Fee or profit paid to any member of the proposing team having a substantial and direct interest in the commercialization of the demonstration technology is unallowable. Competitive subcontracts placed with the prior written consent of the Contracting Officer and subcontracts for routine supplies and services are not covered by this prohibition.
- X Business losses are unallowable.

NOTE: See Federal Acquisition Regulations (FAR) 31.2 for the complete Cost Principles and Procedures applicable to Commercial Organizations.

2.10 Payment Procedures - Reimbursement Through the Automated Clearing House (ACH) (OCT 2004)

- a. Method of Payment. Payment will be made by reimbursement through ACH.
- b. Requesting Reimbursement. For non-construction awards, you must submit a Standard Form (SF) 270, "Request for Advance or Reimbursement" and appropriate supporting documentation to the addressees listed below. The supporting documentation must show the total federal share claimed on the SF 270, the non-federal share claimed for the billing period if cost sharing is required, and cumulative expenditures to date (both Federal and non-Federal) for each of the following categories, if applicable: salaries/wages and fringe benefits; equipment; travel; participant/training support costs, if any; other direct costs, including subawards/contracts; and indirect costs. The SF 270 must be submitted to:

U.S. Department of Energy
 Oak Ridge Financial Service Center
 P.O. Box 4787
 Oak Ridge, TN 37831

Two copies of the SF 270 and backup information, see Attachment D, must be submitted to:

U.S. Department of Energy
 National Energy Technology Laboratory
 ATTN: Commercial Payments
 626 Cochrans Mill Road
 POBOX 10940

Pittsburgh, PA 15236-0940

- c. Timing of submittals. Submittal of the SF 270 should coincide with your normal billing pattern, but not more frequently than every two weeks. Requests for reimbursement must be limited to the amount of disbursements made during the billing period for the federal share of direct project costs and the proportionate share of any allowable indirect costs incurred during that billing period.
- d. Adjusting payment requests for available cash. You must disburse any funds that are available from repayments to and interest earned on a revolving fund, program income, rebates, refunds, contract settlements, audit recoveries, credits, discounts, and interest earned on any of those funds before requesting additional cash payments from DOE.
- e. Payments. The DOE approving official will approve the invoice as soon as practicable but not later than 30 days after your request is received, unless the billing is improper. Upon receipt of an invoice payment authorization from the DOE approving official, the DOE Oak Ridge Financial Service Center (ORFSC) will disburse payments to you. All payments are made by electronic funds transfer to the bank account identified on the ACH Vendor/Miscellaneous Payment Enrollment Form (SF 3881) that you filed.
- (f) Status of Payments. The Oak Ridge Financial Service Center (ORFSC) has a system via Internet, in which contractors can request information about payments by invoice, by contract number, and/or by paid date. The system is called Vendor Inquiry Payment Electronic Reporting System (VIPERS) and is available to recipients at the following web site: <http://finweb.oro.doe/vipers.htm>. Recipients must have a federal tax identification number (TIN) and then obtain a personal identification number (PIN) to access the system.

2.11 Continuation Application and Funding (OCT 2004)

- a. Continuation Application. A continuation application is a non-competitive application for an additional budget period within a previously approved project period. At least 90 days before the end of each budget period, you must submit to the DOE Project Officer identified in Block 11 and the DOE Award Administrator identified in Block 12 of the Notice of Financial Assistance Award your continuation application, which includes the following information:
 - 1. A report on your progress towards meeting the objectives of the project, including any significant findings, conclusions, or developments, and an estimate of any unobligated balances remaining at the end of the budget period. If the remaining unobligated balance is estimated to exceed 20 percent of the funds available for the budget period, explain why the excess funds have not been obligated and how they will be used in the next budget period.
 - 2. A completed Budget Form SF 424A and a detailed budget in accordance with 10 CFR 600.26 supporting justification for the upcoming budget period if additional funds are requested, a reduction of funds is anticipated, or a budget for the upcoming budget period was not approved at the time of award.
 - 3. A description of your plans for the conduct of the project during the upcoming budget period, if there are changes from the DOE approved application.
 - 4. A detailed cost proposal and Financing/Funding Plan for **Budget Period 2** along with an estimated total cost for Budget Period 3.
 - 5. Along with the Continuation Application for **Budget Period 3** a detailed cost proposal for Budget Period 3 and, if there are changes, a revised Financing/Funding Plan.
- b. Continuation Funding. Continuation funding is contingent on (1) availability of funds; (2) satisfactory progress towards meeting the objectives of your approved application; (3) submittal of required reports; and (4) compliance with the terms and conditions of the award.

2.12 Acknowledgment of Federal Funding (NOV 1998)

When issuing statements, press releases, requests for proposals, bid solicitations, and other documents describing this project, the Recipient shall clearly state (1) the percentage of the total cost of the project which will be financed with Federal money, and (2) the dollar amount of Federal funds for the project.

2.13 Property Management and Disposition (SEPT 2002)

Title to all real property, equipment and supplies (excluding Government-furnished property) acquired by or on behalf of the Recipient in connection with performance of the Project shall vest upon acquisition in the Recipient. The Recipient shall make such property available for use in the Project. During the period of the Cooperative Agreement, the Recipient may, with the DOE Contracting Officer's prior approval, encumber its title to or dispose of such property. Should said property be sold or Recipient receive financial benefit from the property disposition, the Recipient shall share the financial benefit with the DOE in the same share ratio as the total project cost sharing. After completion of the demonstration period the Recipient retains unconditional title and has no further obligation to DOE with respect to the property.

The cost of disposal of the Demonstration Facility is an allowable cost only if proposed and included in the cost estimate for Demonstration/Operations.

The use, management, and disposition of all government-furnished property shall be governed by 10 CFR 600.320 thru 600.324.

2.14 Real Property - (JAN 1999)

Real property is not authorized for purchase during Budget Period 1.

2.15 Federally Owned Property (Government-Furnished) - None (JAN 1999)

It is not anticipated that any Government-furnished property will be provided under this award.

2.16 Key Personnel (APR 2002)

Recipient personnel considered to be essential and key to the work being performed hereunder are specified below:

| NAME | TITLE | TELEPHONE |
|---------------|--|--------------|
| Jim Milkovich | VP, Technical Services & Fuel Recipient | 952/847-2371 |
| Tom Lynch | Chief Engineer – Gasification ConocoPhillips | 812/535-6053 |

The personnel specified in this clause are considered to be essential to the project. Before removing or replacing any key personnel, the Recipient shall notify the Contracting Officer reasonably in advance and shall submit justification (including proposed substitutions) in sufficient detail to permit evaluation of the impact on the project. No key personnel may be substituted without the Contracting Officer's approval. Such approval shall be obtained in advance of the substitution, except that the Contracting Officer may ratify a substitution which, because of exigent circumstances, was made before the Recipient could request and/or obtain the Contracting Officer's approval.

2.17 Project Site and Access (MAR 2002)

The project shall be performed principally at a site located on the Taconite Tax Relief Area as defined by Minnesota Law. At the request of the DOE Contracting Officer or the COR, the Recipient shall provide Government officials and interested members of the public as determined by DOE with access to the project site(s) to observe project operations at reasonable times and with reasonable limitations on the numbers of people during each visit.

2.18 Paperwork Reduction – Cooperative Agreements (SEPT 2002)

The award is subject to the requirements of the Paperwork Reduction Act of 1980 as implemented by the Office of Management and Budget rules, "Controlling Paperwork Burdens on the Public," published at 5 CFR 1320.

The Recipient shall submit any proposed sponsored information collection to the person identified on the DOE F 4600.1 (Award Face Page, Block 12). The proposal shall be submitted at least 120 days prior to the intended date of information collection. DOE will seek the requisite approval from the Office of Management and Budget (OMB) and will promptly notify the Recipient of the disposition of the request.

2.19 Public Access to Information (APR 2000)

The Freedom of Information Act, as amended, and the DOE implementing regulations (10 CFR 1004) require DOE to release certain documents and records regarding awards to any person who provides a written request. The intended use of the information will not be a criterion for release.

2.20 Compliance with Buy American Act (OCT 2004)

In accepting this award, the Recipient agrees to comply with sections 2 through 4 of the Act of March 3, 1933 (41 U.S.C. 10a-10c, popularly known as the "Buy American Act"). The Recipient should review the provisions of the Act to ensure that expenditures made under this award are in accordance with it.

2.21 Notice Regarding the Purchase of American-Made Equipment and Products – Sense of Congress (OCT 2004)

It is the sense of the Congress that, to the greatest extent practicable, all equipment and products purchased with funds made available under this award should be American-made.

2.22 Lobbying Restrictions (OCT 2004)

By accepting funds under this award, Recipient agrees that none of the funds obligated on the award shall be made available for any activity or the publication or distribution of literature that in any way tends to promote public support or opposition to any legislative proposal on which Congressional action is not complete. This restriction is in addition to those prescribed elsewhere in statute and regulation.

2.23 Notice Regarding Unallowable Costs and Lobbying Activities (NOV 1998)

Recipients of financial assistance are cautioned to carefully review the allowable cost and other provisions applicable to expenditures under their particular award instruments. If financial assistance funds are spent for purposes or in amounts inconsistent with the allowable cost or any other provisions governing expenditures in an award instrument, the government may pursue a number of remedies against the Recipient, including in appropriate circumstances, recovery of such funds, termination of the award, suspension or debarment of the Recipient from future awards, and criminal prosecution for false statements.

Particular care should be taken by the Recipient to comply with the provisions prohibiting the expenditure of funds for lobbying and related activities. Financial assistance awards may be used to describe and promote the understanding of scientific and technical aspects of specific energy technologies, but not to encourage or support political activities such as the collection and dissemination of information related to potential, planned or pending legislation.

2.24 Reporting (NOV 1998)

Failure to comply with the reporting requirements contained in this award will be considered a material noncompliance with the terms of the award. Noncompliance may result in a withholding of future payments, suspension or termination of the current award, and withholding of future awards. A willful failure to perform, a

history of failure to perform, or of unsatisfactory performance of this and/or other financial assistance awards, may also result in a debarment action to preclude future awards by Federal agencies.

2.25 Recipient Press Releases (APR 1998)

The DOE policy and procedure on planned press releases requires that all Recipient press releases be reviewed and approved by DOE prior to issuance. Therefore, the Recipient shall, at least ten (10) days prior to the planned issue date, submit a draft copy to the Contracting Officer of any planned press releases related to work performed under this award. The Contracting Officer will then obtain necessary reviews and clearances and provide the Recipient with the results of such reviews prior to the planned issue date.

2.26 Publication of Results/Acknowledgment Statement (MAR 2004)

Publications, as well as reports prepared under this award shall contain the following acknowledgment statement:

"This (describe material) was prepared with the support of the U.S. Department of Energy, under Award No. DE-FC26-06NT42385. However, any opinions, findings, conclusions, or recommendations expressed herein are those of the author(s) and do not necessarily reflect the views of the DOE".

2.27 National Environmental Policy Act (NEPA) – Prior Approvals (JUNE 2001)

The National Environmental Policy Act of 1969 (NEPA) requires that all Federal agencies consider the impacts of their projects on the human environment. As part of the DOE's NEPA requirements, the Recipient shall be required to supply to the DOE certain environmental information. DOE funds may only be expended by the Recipient on Budget Period 1 activities, or in a manner consistent with 40 CFR 1506.1, until DOE notifies the Recipient that all NEPA requirements have been satisfied. In the event that the Recipient expends its own or third party funds on activities not authorized by this provision, such expenditures are entirely at the Recipient's risk that DOE's NEPA analysis will support such activities.

2.28 Environmental, Safety & Health (OCT 2003)

The recipient must comply with applicable Federal, State, and local environmental, safety and health laws and regulations for work performed under this award.

2.29 Hazardous Wastes Manifests and Labels (MAR 2003)

The Recipient shall not identify, on wastes manifests or container labels or otherwise, the DOE or the NETL as the owner or generator of hazardous wastes without written permission, signed by either the NETL Director or both the NETL Contracting Officer and the NETL ES&H Division Director, unless expressly and specifically permitted by the award.

2.30 Permits and Licenses (AUG 1999)

Within sixty (60) days of award, the Recipient shall submit to the DOE Project Officer a list of ES&H approvals that, in the Recipient's opinion, shall be required to complete the work under this award. The list shall include the topic of the approval being sought, the approving authority, and the expected submittal/approval schedule. The DOE Project Officer shall be notified as specific items are added or removed from the list and processed through their approval cycles.

The Recipient agrees to include this clause in first-tier subcontracts and agrees to enforce the terms of this clause.

2.31 RESERVED

2.32 Limitation of DOE Liability (MAR 2002)

Awards under this part are subject to the requirement that the maximum DOE obligation to the recipient is the

amount shown in the Notice of Financial Assistance Award as the amount of DOE funds obligated. DOE shall not be obligated to make any additional, supplemental, continuation, renewal or other awards for the same or any other purpose.

2.33 Bonding for Construction (MAR 2002)

The Recipient shall require any construction contractor or subcontractor to obtain performance and payment bonds for any construction project in accordance with practices approved by the Contracting Officer.

2.34 Termination (MAR 2002)

The Cooperative Agreement may be terminated in accordance with 10 CFR 600.351.

2.35 Records Retention, Access, and Disclosure (MAR 2002)

(A) Period of Retention

The Recipient shall retain all financial and performance records, supporting documents, statistical records, and other records of the Recipient which are required to be retained by the terms of this Cooperative Agreement, and any other records the Recipient reasonably considers to be pertinent to this Cooperative Agreement. The period of required retention shall be from the date each such record is created or received by the Recipient until three years after one of the following dates, whichever is latest: the expiration date of this Cooperative Agreement; the date the Recipient's final expenditure report is submitted to DOE; or if this Cooperative Agreement is terminated in its entirety, the effective date of the termination. If any claim, litigation, negotiation, investigation, audit, or other action involving the records starts before the expiration of the three-year retention period, the Recipient shall retain the records until such action is completed and all related issues are resolved, or until the end of the three-year retention period, whichever is later.

(B) Authorized Copies

Copies made by microfilm, photocopying, or similar methods may be substituted for original records. Records originally created by computer may be retained on an electronic medium, provided such medium is "read only" or is protected in such a manner that the electronic record can be authenticated as an original record.

(C) Access to Records

Subject to any legitimate claims of Attorney/Client Privilege as determined by a court of competent jurisdiction, DOE and the Comptroller General of the United States, or any of their authorized representatives, shall have the right of access to any books, documents, papers, or other records (including those on electronic media) which are pertinent to this Cooperative Agreement. The purpose of such access is limited to the making of audits, examinations, excerpts, and transcripts. The right of access described in this paragraph shall last as long as the Recipient retains records which are pertinent to this Cooperative Agreement.

(D) Restrictions on Public Disclosure

The Federal Freedom of Information Act 5 USC 552 does not apply to records the Recipient is required to retain by the terms of this Cooperative Agreement to the extent that the records are not also in the possession of the Government. Unless otherwise required by law or a court of competent jurisdiction, the Recipient shall not be required to disclose such records to the public.

2.36 Severability (MAR 2002)

If a court of competent jurisdiction or the DOE Financial Assistance Appeals Board determines that any part of this Cooperative Agreement is invalid, void, unenforceable, or inconsistent with any applicable Federal statute or regulation, such part shall be deemed to have been amended or deleted to conform to such determination.

2.37 Program Income

If you earn program income during the project period as a result of this award, you may use the program income to meet your cost sharing requirement.

2.38 Subcontracts and Other Agreements (MAR 2002)

Subcontracts or agreements will not contain provisions that are inconsistent with the Cooperative Agreement and Repayment Agreement nor would adversely affect the ability of the Recipient to perform its obligations under this Cooperative Agreement and Repayment Agreement. The following named contracts, subcontracts, licenses, and agreements require prior review and approval by the Contracting Officer prior to execution:

Budget Period 1 - - NONE

Budget Period 2 - - TBD

The request or approval documentation shall consist of an analysis of the reasonableness of the costs inclusive of the rationale for selection of the supplier, and the procurement, scope, terms, and conditions consistent with the Recipient's standard procurement practices. Best efforts will be made to approve or comment on submitted documents within ten (10) business days of receipt and such approval will not be unreasonably withheld.

2.39 Annual Indirect Cost Proposal and Reconciliation (OCT 2004)

- a. In accordance with the applicable cost principles, Recipient must submit an annual indirect cost proposal, reconciled to Recipient's financial statements, within six months after the close of each fiscal year, unless Recipient has negotiated a predetermined or fixed indirect rate(s), or fixed amount for indirect or facilities and administration (F&A) costs.
- b. Recipient should submit their annual indirect cost proposal directly to the cognizant agency for negotiating and approving indirect costs. If DOE is the cognizant agency, send your proposal to the Cognizant Department of Energy Office (CDO). If Recipient does not have a cognizant agency or if Recipient does not know the DOE CDO, contact the DOE Award Administrator identified in Block 12 of the Notice of Financial Assistance Award.

2.40 Notice of Invoice Processing by Support Contractor (DEC 1999)

A support service contractor performs the function of processing of all invoices submitted to the National Energy Technology Laboratory, against its awards. Therefore, this contractor has access to your business confidential cost/rate information. A special provision in this contractor's award requires the confidential treatment by all contractor employees of any and all business confidential information of other contractors and financial assistance recipients to which they have access.

2.41 Special Conditions of Award

Detailed costs, by cost element for Budget Period 1, from the below listed subcontractors shall be delivered to the DOE in a format and content satisfactory to the Contracting Officer not later than 30 days subsequent to the award date of this Cooperative Agreement. Incurred costs, from the below listed subcontractors, in excess of the proposed costs for each individual subcontractor listed in Recipient's December 2005 cost proposal revision shall not be reimbursed by the DOE prior to completion by DOE of its review of the detailed costs for each subcontractor. The DOE shall require 90 days for review of the detailed costs for each subcontractor. Approval or comments will be provided within the 90 day period by the Contract Specialist responsible for administration of this Cooperative Agreement.

If the above is not met, within the 120 day time limit, for any of the listed subcontractors, said subcontractor shall not be reimbursed for costs incurred until said condition is remedied.

Subcontractors requiring detailed cost submittals:

Excelsior deleted this

Not sure how this description of the clause provisions and Competitive Review

KBR
CSFB
ICF Resources, LLC
Latham & Watkins, LLP
Midwest ISO
Leonard, Street, & Deinard
Marsh USA, Inc.
URS Corporation
Fluor (non-feed proposal)
Short Elliot Hendrickson, Inc.

OK to delete

However, irrespective of the above condition, the estimated costs of Conoco Phillips under a subcontract with Fluor Enterprises shall not be paid unless and until an audit of the accounting system, labor rates, and/or indirect rate(s) has been performed by DCAA and there is a satisfactory resolution of any issues identified by the audit. MEP-I and Fluor Enterprises have agreed that NETL may communicate directly with Conoco Phillips on this matter.

SECTION III -INTELLECTUAL PROPERTY PROVISIONS

3.1 Intellectual Property Provisions (JAN 2004)

The patent and technical data clauses included in this section apply to this award. As used in these applicable clauses, the term "Patent Counsel" refers to the following point of contact:

Intellectual Property Law Division
U.S. Department of Energy
Chicago Operations Office
9800 South Cass Avenue
Argonne, IL 60439

In reading these provisions, any reference to "contractor" shall mean "recipient", and any reference to "contract" or "subcontract" shall mean "award" or "subaward".

The Recipient shall include intellectual property clauses in any subaward in accordance with requirements of the clauses in this section and of 10 CFR Parts 600.136 or 600.325 as appropriate.

3.2 Confidential Business Information (JAN 2004)

Information represented to the Department as being confidential business information, and which does not include "Technical Data" as that term is defined in the "Rights in Data" clause in this agreement, shall be submitted as an attachment to the required reports and will be withheld from disclosure outside the U.S. Government to the extent permitted by law. Such attachment and each page therein shall be stamped with the following legend and no other:

CONFIDENTIAL BUSINESS INFORMATION

The Recipient considers the material furnished herein to contain confidential business information which is to be withheld from disclosure outside the U.S. Government to the extent permitted by law.

3.3 52.227-1 Authorization and Consent (JUL 1995) - Alternate I (APR 1984)

- (a) The Government authorizes and consents to all use and manufacture of any invention described in and covered by a United States patent in the performance of this contract or any subcontract at any tier.
- (b) The Contractor agrees to include, and require inclusion of, this clause, suitably modified to identify the parties, in all subcontracts at any tier for supplies or services (including construction, architect-engineer services, and materials, supplies, models, samples, and design or testing services expected to exceed the simplified acquisition threshold); however, omission of this clause from any subcontract, including those at or below the simplified acquisition threshold, does not affect this authorization and consent.

3.4 52.227-2 Notice and Assistance Regarding Patent and Copyright Infringement (AUG 1996)

- (a) The Contractor shall report to the Contracting Officer, promptly and in reasonable written detail, each notice or claim of patent or copyright infringement based on the performance of this contract of which the Contractor has knowledge.
- (b) In the event of any claim or suit against the Government on account of any alleged patent or copyright infringement arising out of the performance of this contract or out of the use of any supplies furnished or work or services performed under this contract, the Contractor shall furnish to the Government, when requested by the Contracting Officer, all evidence and information in possession of the Contractor pertaining to such suit or claim. Such evidence and information shall be furnished at the expense of the Government except where the Contractor has agreed to indemnify the Government.

- (c) The Contractor agrees to include, and require inclusion of, this clause in all subcontracts at any tier for supplies or services (including construction and architect-engineer subcontracts and those for material, supplies, models, samples, or design or testing services) expected to exceed the simplified acquisition threshold at FAR 2.101.

3.5 52.227-3 Patent Indemnity (APR 1984)

- (a) The Contractor shall indemnify the Government and its officers, agents, and employees against liability, including costs, for infringement of any United States patent (except a patent issued upon an application that is now or may hereafter be withheld from issue pursuant to a Secrecy Order under 35 U.S.C. 181) arising out of the manufacture or delivery of supplies, the performance of services, or the construction, alteration, modification, or repair of real property (hereinafter referred to as "construction work") under this contract, or out of the use or disposal by or for the account of the Government of such supplies or construction work.
- (b) This indemnity shall not apply unless the Contractor shall have been informed as soon as practicable by the Government of the suit or action alleging such infringement and shall have been given such opportunity as is afforded by applicable laws, rules, or regulations to participate in its defense. Further, this indemnity shall not apply to -
 - (1) An infringement resulting from compliance with specific written instructions of the Contracting Officer directing a change in the supplies to be delivered or in the materials or equipment to be used, or directing a manner of performance of the contract not normally used by the Contractor;
 - (2) An infringement resulting from addition to or change in supplies or components furnished or construction work performed that was made subsequent to delivery or performance; or
 - (3) A claimed infringement that is unreasonably settled without the consent of the Contractor, unless required by final decree of a court of competent jurisdiction.

3.6 952.227-9 Refund of Royalties (FEB 1995)

- (a) The contract price includes certain amounts for royalties payable by the Contractor or subcontractors or both, which amounts have been reported to the Contracting Officer.
- (b) The term "royalties" as used in this clause refers to any costs or charges in the nature of royalties, license fees, patent or license amortization costs, or the like, for the use of or for rights in patents and patent applications in connection with performing this contract or any subcontract here-under. The term also includes any costs or charges associated with the access to, use of, or other right pertaining to data that is represented to be proprietary and is related to the performance of this contract or the copying of such data or data that is copyrighted.
- (c) The Contractor shall furnish to the Contracting Officer, before final payment under this contract, a statement of royalties paid or required to be paid in connection with performing this contract and subcontracts hereunder together with the reasons.
- (d) The Contractor will be compensated for royalties reported under paragraph (c) of this clause, only to the extent that such royalties were included in the contract price and are determined by the Contracting Officer to be properly chargeable to the Government and allocable to the contract. To the extent that any royalties that are included in the contract price are not, in fact, paid by the Contractor or are determined by the Contracting Officer not to be properly chargeable to the government and allocable to the contract, the contract price shall be reduced. Repayment or credit to the Government shall be made as the Contracting Officer directs. The approval by DOE of any individual payments or royalties shall not prevent the Government from contesting at any time the enforceability, validity, scope of, or title to, any patent or the proprietary nature of data pursuant to which a royalty or other payment is to be or has been made.
- (e) If, at any time within 3 years after final payment under this contract, the Contractor for any reason is relieved in whole or in part from the payment of the royalties included in the final contract price as adjusted pursuant to

paragraph (d) of this clause, the Contractor shall promptly notify the Contracting Officer of that fact and shall reimburse the Government in a corresponding amount.

- (f) The substance of this clause, including this paragraph (f), shall be included in any subcontract in which the amount of royalties reported during negotiation of the subcontract exceeds \$250.

3.7 Patent Rights (Small Business Firms and Nonprofit Organizations) (OCT 2003)

(a) Definitions

Invention means any invention or discovery which is or may be patentable or otherwise protectable under title 35 of the United States Code, or any novel variety of plant which is or may be protected under the Plant Variety Protection Act (7 U.S.C. 2321 et seq.). Made when used in relation to any invention means the conception or first actual reduction to practice of such invention.

Nonprofit organization means a university or other institution of higher education or an organization of the type described in section 501(c)(3) of the Internal Revenue Code of 1954 (26 U.S.C. 501(c)) and exempt from taxation under section 501(a) of the Internal Revenue Code (26 U.S.C. 501(a)) or any nonprofit scientific or educational organization qualified under a State nonprofit organization statute.

Practical application means to manufacture in the case of a composition or product, to practice in the case of a process or method, or to operate in the case of a machine or system; and, in each case, under such conditions as to establish that the invention is being utilized and that its benefits are to the extent permitted by law or Government regulations available to the public on reasonable terms.

Small business firm means a small business concern as defined at section 2 of Public Law 85-536 (16 U.S.C. 632) and implementing regulations of the Administrator of the Small Business Administration. For the purpose of this clause, the size standards for small business concerns involved in Government procurement and subcontracting at 13 CFR 121.3 through 121.8 and 13 CFR 121.3 through 121.12, respectively, will be used.

Subject invention means any invention of the Recipient conceived or first actually reduced to practice in the performance of work under this award, provided that in the case of a variety of plant, the date of determination (as defined in section 41(d) of the Plant Variety Protection Act, 7 U.S.C. 2401(d)) must also occur during the period of award performance.

(b) Allocation of Principal Rights

The Recipient may retain the entire right, title, and interest throughout the world to each subject invention subject to the provisions of this Patent Rights clause and 35 U.S.C. 203. With respect to any subject invention in which the Recipient retains title, the Federal Government shall have a non-exclusive, nontransferable, irrevocable, paid-up license to practice or have practiced for or on behalf of the U.S. the subject invention throughout the world.

(c) Invention Disclosure, Election of Title and Filing of Patent Applications by Recipient

- (1) The Recipient will disclose each subject invention to DOE within two months after the inventor discloses it in writing to Recipient personnel responsible for the administration of patent matters. The disclosure to DOE shall be in the form of a written report and shall identify the award under which the invention was made and the inventor(s). It shall be sufficiently complete in technical detail to convey a clear understanding to the extent known at the time of disclosure, of the nature, purpose, operation, and the physical, chemical, biological or electrical characteristics of the invention. The disclosure shall also identify any publication, on sale or public use of the invention and whether a manuscript describing the invention has been submitted for publication and, if so, whether it has been accepted for publication at the time of disclosure. In addition, after disclosure to DOE, the Recipient will promptly notify DOE of the acceptance of any manuscript describing the invention for publication or of any on sale or public use planned by the Recipient.

- (2) The Recipient will elect in writing whether or not to retain title to any such invention by notifying DOE within two years of disclosure to DOE. However, in any case where publication, on sale, or public use has initiated the one-year statutory period wherein valid patent protection can still be obtained in the U.S., the period for election of title may be shortened by the agency to a date that is no more than 60 days prior to the end of the statutory period.
- (3) The Recipient will file its initial patent application on an invention to which it elects to retain title within one year after election of title or, if earlier, prior to the end of any statutory period wherein valid patent protection can be obtained in the U.S. after a publication, on sale, or public use. The Recipient will file patent applications in additional countries or international patent offices within either ten months of the corresponding initial patent application, or six months from the date when permission is granted by the Commissioner of Patents and Trademarks to file foreign patent applications when such filing has been prohibited by a Secrecy Order.
- (4) Requests for extension of the time for disclosure to DOE, election, and filing under subparagraphs (c) (1), (2), and (3) of this clause may, at the discretion of DOE, be granted.

(d) Conditions When the Government May Obtain Title

The Recipient will convey to DOE, upon written request, title to any subject invention:

- (1) If the Recipient fails to disclose or elect the subject invention within the times specified in paragraph (c) of this patent rights clause, or elects not to retain title; provided that DOE may only request title within 60 days after learning of the failure of the Recipient to disclose or elect within the specified times;
- (2) In those countries in which the Recipient fails to file patent applications within the times specified in paragraph (c) of this Patent Rights clause; provided, however, that if the Recipient has filed a patent application in a country after the times specified in paragraph (c) of this Patent Rights clause, but prior to its receipt of the written request of DOE, the Recipient shall continue to retain title in that country; or
- (3) In any country in which the Recipient decides not to continue the prosecution of any application for, to pay the maintenance fees on, or defend in a reexamination or opposition proceeding on, a patent on a subject invention.

(e) Minimum Rights to Recipient and Protection of the Recipient Right To File

- (1) The Recipient will retain a non-exclusive royalty-free license throughout the world in each subject invention to which the Government obtains title, except if the Recipient fails to disclose the subject invention within the times specified in paragraph (c) of this Patent Rights clause. The Recipient's license extends to its domestic subsidiaries and affiliates, if any, within the corporate structure of which the Recipient is a party and includes the right to grant sublicenses of the same scope of the extent the Recipient was legally obligated to do so at the time the award was awarded. The license is transferable only with the approval of DOE except when transferred to the successor of that part of the Recipient's business to which the invention pertains.
- (2) The Recipient's domestic license may be revoked or modified by DOE to the extent necessary to achieve expeditious practical application of the subject invention pursuant to an application for an exclusive license submitted in accordance with applicable provisions at 37 CFR part 404 and the agency's licensing regulation, if any. This license will not be revoked in that field of use or the geographical areas in which the Recipient has achieved practical application and continues to make the benefits of the invention reasonably accessible to the public. The license in any foreign country may be revoked or modified at discretion of the funding Federal agency to the extent the Recipient, its licensees, or its domestic subsidiaries or affiliates have failed to achieve practical application in that

foreign country.

- (3) Before revocation or modification of the license, the funding Federal agency will furnish the Recipient a written notice of its intention to revoke or modify the license, and the Recipient will be allowed thirty days (or such other time as may be authorized by DOE for good cause shown by the Recipient) after the notice to show cause why the license should not be revoked or modified. The Recipient has the right to appeal, in accordance with applicable regulations in 37 CFR Part 404 and the agency's licensing regulations, if any, concerning the licensing of Government-owned inventions, any decision concerning the revocation or modification of its license.

(f) Recipient Action To Protect Government's Interest

- (1) The Recipient agrees to execute or to have executed and promptly deliver to DOE all instruments necessary to:
 - (i) Establish or confirm the rights the Government has throughout the world in those subject inventions for which the Recipient retains title; and
 - (ii) Convey title to DOE when requested under paragraph (d) of this Patent Rights clause, and to enable the government to obtain patent protection throughout the world in that subject invention.
- (2) The Recipient agrees to require, by written agreement, its employees, other than clerical and non-technical employees, to disclose promptly in writing to personnel identified as responsible for the administration of patent matters and in a format suggested by the Recipient each subject invention made under this award in order that the Recipient can comply with the disclosure provisions of paragraph (c) of this Patent Rights clause, and to execute all papers necessary to file patent applications on subject inventions and to establish the Government's rights in the subject inventions. The disclosure format should require, as a minimum, the information requested by paragraph (c)(1) of this Patent Rights clause. The Recipient shall instruct such employees through the employee agreements or other suitable educational programs on the importance of reporting inventions in sufficient time to permit the filing of patent applications prior to U.S. or foreign statutory bars.
- (3) The Recipient will notify DOE of any decision not to continue prosecution of a patent application, pay maintenance fees, or defend in a reexamination or opposition proceeding on a patent, in any country, not less than 30 days before the expiration of the response period required by the relevant patent office.
- (4) The Recipient agrees to include, within the specification of any U.S. patent application and any patent issuing thereon covering a subject invention, the following statement: "This invention was made with Government support under (identify the award) awarded by (identify DOE). The Government has certain rights in this invention."

(g) Subaward/Contract

- (1) The Recipient will include this Patent Rights clause, suitably modified to identify the parties, in all subawards/contracts, regardless of tier, for experimental, developmental or research work to be performed by a small business firm or nonprofit organization. The subrecipient/contractor will retain all rights provided for the Recipient in this Patent Rights clause, and the Recipient will not, as part of the consideration for awarding the subcontract, obtain rights in the subcontractors' subject inventions.
- (2) The Recipient will include in all other subawards/contracts, regardless of tier, for experimental, developmental or research work, the patent rights clause required by 10 CFR 600.325(c).
- (3) In the case of subawards/contracts at any tier, DOE, the Recipient, and the subrecipient/contractor agree that the mutual obligations of the parties created by this clause constitute a contract between the subrecipient/contractor and DOE with respect to those matters covered by the clause.

(h) Reporting on Utilization of Subject Inventions

The Recipient agrees to submit on request periodic reports no more frequently than annually on the utilization of a subject invention or on efforts at obtaining such utilization that are being made by the Recipient or its licensees or assignees. Such reports shall include information regarding the status of development, date of first commercial sale or use, gross royalties received by the Recipient and such other data and information as DOE may reasonably specify. The Recipient also agrees to provide additional reports in connection with any march-in proceeding undertaken by DOE in accordance with paragraph (j) of this Patent Rights clause. As required by 35 U.S.C. 202(c)(5), DOE agrees it will not disclose such information to persons outside the Government without the permission of the Recipient.

(i) Preference for United States Industry.

Notwithstanding any other provision of this Patent Rights clause, the Recipient agrees that neither it nor any assignee will grant to any person the exclusive right to use or sell any subject invention in the U.S. unless such person agrees that any products embodying the subject invention or produced through the use of the subject invention will be manufactured substantially in the U.S. However, in individual cases, the requirement for such an agreement may be waived by DOE upon a showing by the Recipient or its assignee that reasonable but unsuccessful efforts have been made to grant licenses on similar terms to potential licensees that would be likely to manufacture substantially in the U.S. or that under the circumstances domestic manufacture is not commercially feasible.

(j) March-in-Rights

The Recipient agrees that with respect to any subject invention in which it has acquired title, DOE has the right in accordance with procedures at 37 CFR 401.6 and any supplemental regulations of the Agency to require the Recipient, an assignee or exclusive licensee of a subject invention to grant a non-exclusive, partially exclusive, or exclusive license in any field of use to a responsible applicant or applicants, upon terms that are reasonable under the circumstances and if the Recipient, assignee, or exclusive licensee refuses such a request, DOE has the right to grant such a license itself if DOE determines that:

- (1) Such action is necessary because the Recipient or assignee has not taken or is not expected to take within a reasonable time, effective steps to achieve practical application of the subject invention in such field of use;
- (2) Such action is necessary to alleviate health or safety needs which are not reasonably satisfied by the Recipient, assignee, or their licensees;
- (3) Such action is necessary to meet requirements for public use specified by Federal regulations and such requirements are not reasonably satisfied by the Recipient, assignee, or licensee; or
- (4) Such action is necessary because the agreement required by paragraph (i) of this Patent Rights clause has not been obtained or waived or because a licensee of the exclusive right to use or sell any subject invention in the U.S. is in breach of such agreement.

(k) Special Provisions for Awards With Nonprofit Organizations

If the Recipient is a nonprofit organization, it agrees that:

- (1) Rights to a subject invention in the U.S. may not be assigned without the approval of DOE, except where such assignment is made to an organization which has as one of its primary functions the management of inventions, provided that such assignee will be subject to the same provisions as the Recipient;
- (2) The Recipient will share royalties collected on a subject invention with the inventor, including Federal

employee co-inventors (when DOE deems it appropriate) when the subject invention is assigned in accordance with 35 U.S.C. 202(e) and 37 CFR 401.10;

- (3) The balance of any royalties or income earned by the Recipient with respect to subject inventions, after payment of expenses (including payments to inventors) incidental to the administration of subject inventions, will be utilized for the support of scientific or engineering research or education; and
- (4) It will make efforts that are reasonable under the circumstances to attract licensees of subject inventions that are small business firms and that it will give preference to a small business firm if the Recipient determines that the small business firm has a plan or proposal for marketing the invention which, if executed, is equally likely to bring the invention to practical application as any plans or proposals from applicants that are not small business firms; provided that the Recipient is also satisfied that the small business firm has the capability and resources to carry out its plan or proposal. The decision whether to give a preference in any specific case will be at the discretion of the Recipient. However, the Recipient agrees that the Secretary of Commerce may review the Recipient's licensing program and decisions regarding small business applicants, and the Recipient will negotiate changes to its licensing policies, procedures or practices with the Secretary when the Secretary's review discloses that the Recipient could take reasonable steps to implement more effectively the requirements of this paragraph (k)(4).

(l) Communications

All communications required by this Patent Rights clause should be sent to the DOE Patent Counsel address listed in the Award Document.

(m) Electronic Filing

Unless otherwise Specified in the award, the information identified in paragraphs (f)(2) and (f)(3) may be electronically filed.

3.8 Rights in Data – Programs Covered Under Special Data Statutes (OCT 2003)

(a) Definitions

Computer Data Bases, as used in this clause, means a collection of data in a form capable of, and for the purpose of, being stored in, processed, and operated on by a computer. The term does not include computer software.

Computer software, as used in this clause, means (i) computer programs which are data comprising a series of instructions, rules, routines, or statements, regardless of the media in which recorded, that allow or cause a computer to perform a specific operation or series of operations and (ii) data comprising source code listings, design details, algorithms, processes, flow charts, formulae and related material that would enable the computer program to be produced, created or compiled. The term does not include computer data bases.

Data, as used in this clause, means recorded information, regardless of form or the media on which it may be recorded. The term includes technical data and computer software. The term does not include information incidental to administration, such as financial, administrative, cost or pricing or management information.

Form, fit, and function data, as used in this clause, means data relating to items, components, or processes that are sufficient to enable physical and functional interchangeability as well as data identifying source, size, configuration, mating and attachment characteristics, functional characteristics, and performance requirements except that for computer software it means data identifying source, functional characteristics, and performance requirements but specifically excludes the source code, algorithm, process, formulae, and flow charts of the software.

Limited rights data, as used in this clause, means data (other than computer software) developed at private

expense that embody trade secrets or are commercial or financial and confidential or privileged.

Restricted computer software, as used in this clause, means computer software developed at private expense and that is a trade secret; is commercial or financial and confidential or privileged; or is published copyrighted computer software; including modifications of such computer software.

Protected data, as used in this clause, means technical data or commercial or financial data first produced in the performance of the award which, if it had been obtained from and first produced by a non-federal party, would be a trade secret or commercial or financial information that is privileged or confidential under the meaning of 5 U.S.C. 552(b)(4) and which data is marked as being protected data by a party to the award.

Protected rights, as used in this clause, mean the rights in protected data set forth in the Protected Rights Notice of paragraph (g) of this clause.

Technical data, as used in this clause, means that data which are of a scientific or technical nature. Technical data does not include computer software, but does include manuals and instructional materials and technical data formatted as a computer data base.

Unlimited rights, as used in this clause, means the right of the Government to use, disclose, reproduce, prepare derivative works, distribute copies to the public, and perform publicly and display publicly, in any manner and for any purpose whatsoever, and to have or permit others to do so.

(b) Allocation of Rights

(1) Except as provided in paragraph (c) of this clause regarding copyright, the Government shall have unlimited rights in –

- (i) Data specifically identified in this agreement as data to be delivered without restriction;
- (ii) Form, fit, and function data delivered under this agreement;
- (iii) Data delivered under this agreement (except for restricted computer software) that constitute manuals or instructional and training material for installation, operation, or routine maintenance and repair of items, components, or processes delivered or furnished for use under this agreement; and
- (iv) All other data delivered under this agreement unless provided otherwise for protected data in accordance with paragraph (g) of this clause or for limited rights data or restricted computer software in accordance with paragraph (h) of this clause.

(2) The Recipient shall have the right to –

- (i) Protect rights in protected data delivered under this agreement in the manner and to the extent provided in paragraph (g) of this clause;
- (ii) Withhold from delivery those data which are limited rights data or restricted computer software to the extent provided in paragraph (h) of this clause;
- (iii) Substantiate use of, add, or correct protected rights or copyrights notices and to take other appropriate action, in accordance with paragraph (e) of this clause; and
- (iv) Establish claim to copyright subsisting in data first produced in the performance of this agreement to the extent provided in subparagraph (c)(1) of this clause.

(c) Copyright

- (1) Data first produced in the performance of this agreement. Except as otherwise specifically provided in this agreement, the Recipient may establish, without the prior approval of the Contracting Officer, claim to copyright subsisting in any data first produced in the performance of this agreement. If claim to copyright is made, the Recipient shall affix the applicable copyright notice of 17 U.S.C. 401 or 402 and acknowledgment of Government sponsorship (including agreement number) to the data when such data are delivered to the Government, as well as when the data are published or deposited for registration as a published work in the U.S. Copyright Office. For such copyrighted data, including computer software, the Recipient grants to the Government, and others acting on its behalf, a paid-up nonexclusive, irrevocable, worldwide license to reproduce, prepare derivative works, distribute copies to the public, and perform publicly and display publicly, by or on behalf of the Government, for all such data.
- (2) Data not first produced in the performance of this agreement. The Recipient shall not, without prior written permission of the Contracting Officer, incorporate in data delivered under this agreement any data that are not first produced in the performance of this agreement and that contain the copyright notice of 17 U.S.C. 401 or 402, unless the Recipient identifies such data and grants to the Government, or acquires on its behalf, a license of the same scope as set forth in subparagraph (c)(1) of this clause; provided, however, that if such data are computer software, the Government shall acquire a copyright license as set forth in subparagraph (h)(3) of this clause if included in this agreement or as otherwise may be provided in a collateral agreement incorporated or made a part of this agreement.
- (3) Removal of copyright notices. The Government agrees not to remove any copyright notices placed on data pursuant to this paragraph (c), and to include such notices on all reproductions of the data.

(d) Release, Publication and Use of Data

- (1) The Recipient shall have the right to use, release to others, reproduce, distribute, or publish any data first produced or specifically used by the Recipient in the performance of this contract, except to the extent such data may be subject to the Federal export control or national security laws or regulations, or unless otherwise provided in this paragraph of this clause or expressly set forth in this contract.
- (2) The Recipient agrees that to the extent it receives or is given access to data necessary for the performance of this agreement which contain restrictive markings, the Recipient shall treat the data in accordance with such markings unless otherwise specifically authorized in writing by the Contracting Officer.

(e) Unauthorized Marking of Data

- (1) Notwithstanding any other provisions of this agreement concerning inspection or acceptance, if any data delivered under this agreement are marked with the notices specified in subparagraph (g)(2) or (g)(3) of this clause and use of such is not authorized by this clause, or if such data bears any other restrictive or limiting markings not authorized by this agreement, the Contracting Officer may at any time either return the data to the Recipient or cancel or ignore the markings. However, the following procedures shall apply prior to canceling or ignoring the markings.
 - (i) The Contracting Officer shall make written inquiry to the Recipient affording the Recipient 30 days from receipt of the inquiry to provide written justification to substantiate the propriety of the markings;
 - (ii) If the Recipient fails to respond or fails to provide written justification to substantiate the propriety of the markings within the 30-day period (or a longer time not exceeding 90 days approved in writing by the Contracting Officer for good cause shown), the Government shall have the right to cancel or ignore the markings at any time after said period and the data will no longer be made subject to any disclosure prohibitions.
 - (iii) If the Recipient provides written justification to substantiate the propriety of the markings

within the period set in subdivision (e)(1)(i) of this clause, the Contracting Officer shall consider such written justification and determine whether or not the markings are to be cancelled or ignored. If the Contracting Officer determines that the markings are authorized, the Recipient shall be so notified in writing. If the Contracting Officer determines, with concurrence of the head of the contracting activity, that the markings are not authorized, the Contracting Officer shall furnish the Recipient a written determination, which determination shall become the final agency decision regarding the appropriateness of the markings unless the Recipient files suit in a court of competent jurisdiction within 90 days of receipt of the Contracting Officer's decision. The Government shall continue to abide by the markings under this subdivision (e)(1)(iii) until final resolution of the matter either by the Contracting Officer's determination become final (in which instance the Government shall thereafter have the right to cancel or ignore the markings at any time and the data will no longer be made subject to any disclosure prohibitions), or by final disposition of the matter by court decision if suit is filed.

- (2) The time limits in the procedures set forth in subparagraph (e)(1) of this clause may be modified in accordance with agency regulations implementing the Freedom of Information Act (5 U.S.C. 552) if necessary to respond to a request thereunder.

(f) Omitted or Incorrect Markings

- (1) Data delivered to the Government without either the limited rights or restricted rights notice as authorized by paragraph (g) of this clause, or the copyright notice required by paragraph (c) of this clause, shall be deemed to have been furnished with unlimited rights, and the Government assumes no liability for the disclosure, use, or reproduction of such data. However, to the extent the data has not been disclosed without restriction outside the Government, the Recipient may request, within 6 months (or a longer time approved by the Contracting Officer for good cause shown) after delivery of such data, permission to have notices placed on qualifying data at the Recipient's expense, and the Contracting Officer may agree to do so if the Recipient –

- (i) Identifies the data to which the omitted notice is to be applied;
- (ii) Demonstrates that the omission of the notice was inadvertent;
- (iii) Establishes that the use of the proposed notice is authorized; and
- (iv) Acknowledges that the Government has no liability with respect to the disclosure, use, or reproduction of any such data made prior to the addition of the notice or resulting from the omission of the notice.

- (2) The Contracting Officer may also:

- (i) Permit correction at the Recipient's expense of incorrect notices if the Recipient identifies the data on which correction of the notice is to be made, and demonstrates that the correct notice is authorized; or
- (ii) Correct any incorrect notices.

(g) Rights to Protected Data

- (1) The Recipient may, with the concurrence of DOE, claim and mark as protected data, any data first produced in the performance of this award that would have been treated as a trade secret if developed at private expense. Any such claimed "protected data" will be clearly marked with the following Protected Rights Notice, and will be treated in accordance with such Notice, subject to the provisions of paragraphs (e) and (f) of this clause.

PROTECTED RIGHTS NOTICE

These protected data were produced under agreement no. DE-FC26-06NT42385 with the U.S. Department of Energy and may not be published, disseminated, or disclosed to others outside the Government until 5 years after completion of the Plant Demonstration and Operations Phase of the Cooperative Agreement unless express written consent is obtained from the Recipient. Upon expiration of the period of protection set forth in this Notice, the Government shall have unlimited rights in this data. This Notice shall be marked on any reproduction of this data, in whole or in part.

(End of notice).

- (2) Any such marked Protected Data may be disclosed under obligations of confidentiality for the following purposes:
 - (i) For evaluation purposes under the restriction that the "Protected Data" be retained in confidence and not be further disclosed; or
 - (ii) To subcontractors or other team members performing work under the Government's (insert name of program or other applicable activity) program of which this award is a part, for information or use in connection with the work performed under their activity, and under the restriction that the Protected Data be retained in confidence and not be further disclosed.
- (3) The obligations of confidentiality and restrictions on publication and dissemination shall end for any Protected Data.
 - (i) At the end of the protected period;
 - (ii) If the data becomes publicly known or available from other sources without a breach of the obligation of confidentiality with respect to the Protected Data;
 - (iii) If the same data is independently developed by someone who did not have access to the Protected Data and such data is made available without obligations of confidentiality; or
 - (iv) If the Recipient disseminates or authorizes another to disseminate such data without obligations of confidentiality.
- (4) However, the Recipient agrees that the following types of data are not considered to be protected and shall be provided to the Government when required by this award without any claim that the data are Protected Data. The parties agree that notwithstanding the following lists of types of data, nothing precludes the Government from seeking delivery of additional data in accordance with this award, or from making publicly available additional non-protected data, nor does the following list constitute any admission by the Government that technical data not on the list is Protected Data.
 - (i) Physical and chemical properties of feed coal and sweet syngas;
 - (ii) Major equipment lists, overall plot plans and representative elevation drawings, and nominal capacities for major systems, including but not limited to air separation, coal preparation and feed, gasification and slag removal and product gas cooling and steam generation and particulate removal and recycle, desulfurization, sulfur recovery, gas turbine cycle, gas turbine heat recovery, and steam generator cycle;
 - (iii) Summary Process Block Diagrams (SPBD) depicting major process steps and major interconnecting streams with qualitative descriptions of the process steps;

- (iv) Overall material and energy balance including stream data (flow, pressure and temperature) of the major interconnecting streams of the coal gasification, combustion turbine generator, heat recovery steam generator and steam turbine generator process blocks;
- (v) Total capital costs for the facility and total fixed and operating costs of the facility, and general economics of the IGCC technology when applied to commercial plants;
- (vi) Operating performance data, start-up and operating experience information, overall plant and component availability, qualitative materials performance, and qualitative control philosophy description for the facility; and,
- (vii) Compositions and flow rates of all solid, liquid and gaseous streams discharged to the environment, as may be required by and submitted to regulatory agencies.

(5) The Government's sole obligation with respect to any protected data shall be as set forth in this paragraph (g).

(h) Protection of Limited Rights Data

(1) When data other than that listed in subparagraphs (b)(1)(i), (ii), and (iii) of this clause are specified to be delivered under this agreement and such data qualify as either limited rights data or restricted computer software, the Recipient, if the Recipient desires to continue protection of such data, shall withhold such data and not furnish them to the Government under this agreement. As a condition to this withholding the Recipient shall identify the data being withheld and furnish form, fit, and function data in lieu thereof.

(2) Notwithstanding subparagraph (h)(1) of this clause, the agreement may identify and specify the delivery of limited rights data, or the Contracting Officer may require by written request the delivery of limited rights data that has been withheld or would otherwise be withholdable. If delivery of such data is so required, the Recipient may affix the following "Limited Rights Notice" to the data and the Government will thereafter treat the data, in accordance with such Notice:

LIMITED RIGHTS NOTICE

(a) These data are submitted with limited rights under Government agreement No. DE-FC26-04NT41768 (and subaward/contract No. -----, if appropriate). These data may be reproduced and used by the Government with the express limitation that they will not, without written permission of the Recipient, be used for purposes of manufacture nor disclosed outside the Government; except that the Government may disclose these data outside the Government for the following purposes, if any, provided that the Government makes such disclosure subject to prohibition against further use and disclosure:

(1) Use (except for manufacture) by Federal support services contractors within the scope of their contracts;

(2) This "limited rights data" may be disclosed for evaluation purposes under the restriction that the "limited rights data" be retained in confidence and not be further disclosed;

(3) This "limited rights data" may be disclosed to other contractors participating in the Government's program of which this Recipient is a part for information or use (except for manufacture) in connection with the work performed under their awards and under the restriction that the "limited rights data" be retained in confidence and not be further disclosed;

(4) This "limited rights data" may be used by the Government or others on its behalf for emergency repair or overhaul work under the restriction that the "limited rights data" be retained in confidence and not be further disclosed;

(5) Release to a foreign government, or instrumentality thereof, as the interests of the United States Government may require, for information or evaluation, or for emergency repair or overhaul work by such government; and

(6) As otherwise allowed in this agreement, use by the Government or others on its behalf to the extent necessary to enable the Government to complete the Statement of Project Objectives (Attachment A) of this agreement.

(b) This Notice shall be marked on any reproduction of these data, in whole or in part.

(End of notice)

(h)(3)(i) Notwithstanding subparagraph (h)(1) of this clause, the agreement may identify and specify the delivery of restricted computer software, or the Contracting Officer may require by written request the delivery of restricted computer software that has been withheld or would otherwise be withholdable. If delivery of such computer software is so required, the Recipient may affix the following "Restricted Rights Notice" to the computer software and the Government will thereafter treat the computer software, subject to paragraphs (d) and (e) of this clause, in accordance with the Notice:

RESTRICTED RIGHTS NOTICE

(a) This computer software is submitted with restricted rights under Government Agreement No. DE-FC26-04NT41768 (and subaward/contract -----, if appropriate). It may not be used, reproduced, or disclosed by the Government except as provided in paragraph (b) of this Notice or as otherwise expressly stated in the agreement.

(b) This computer software may be—

(1) Used or copied for use in or with the computer or computers for which it was acquired, including use at any Government installation to which such computer or computers may be transferred;

(2) Used or copied for use in a backup computer if any computer for which it was acquired is inoperative;

(3) Reproduced for safekeeping (archives) or backup purposes;

(4) Modified, adapted, or combined with other computer software, provided that the modified, combined, or adapted portions of the derivative software are made subject to the same restricted rights;

(5) Disclosed to and reproduced for use by Federal support service Contractors in accordance with subparagraphs (b)(1) through (4) of this clause, provided the Government makes such disclosure or reproduction subject to these restricted rights;

(6) Used or copied for use in or transferred to a replacement computer; and

(7) As otherwise allowed in this agreement, used by the Government or others on its behalf to the extent necessary to enable the Government to complete the Statement of Project Objectives (Attachment A) of this agreement.

(c) If this computer software is published copyrighted computer software, it is licensed to the Government, without further disclosure prohibitions, with the minimum rights set forth in paragraph (c) of this clause.

(d) Any other rights or limitations regarding the use, duplication, or disclosure of this computer software are to be expressly stated in, or incorporated in, the agreement.

(e) This Notice shall be marked on any reproduction of this computer software, in whole or in part.

(End of notice)

(ii) Where it is impractical to include the Restricted Rights Notice on restricted computer software, the following short-form Notice may be used in lieu thereof:

RESTRICTED RIGHTS NOTICE

Use, reproduction, or disclosure is subject to restrictions set forth in Agreement No. DE-FC26-06NT42385 (and subaward/contract -----, if appropriate) with ----- (name of Recipient and subrecipient/contractor).

(End of notice)

(iii) If restricted computer software is delivered with the copyright notice of 17 U.S.C. 401, it will be presumed to be published copyrighted computer software licensed to the Government without disclosure prohibitions, with the minimum rights set forth in paragraph (b) of this clause, unless the Recipient includes the following statement with such copyright notice: "Unpublished--rights reserved under the Copyright Laws of the United States."

(i) Subaward/Contract

The Recipient has the responsibility to obtain from its subrecipients/contractors all data and rights therein necessary to fulfill the Recipient's obligations to the Government under this agreement. If a subrecipient/contractor refuses to accept terms affording the Government such rights, the Recipient shall promptly bring such refusal to the attention of the Contracting Officer and not proceed with subaward/contract award without further authorization.

(j) Additional Data Requirements

In addition to the data specified elsewhere in this agreement to be delivered, the Contracting Officer may, at anytime during agreement performance or within a period of 3 years after acceptance of all items to be delivered under this agreement, order any data first produced or specifically used in the performance of this agreement. This clause is applicable to all data ordered under this subparagraph. Nothing contained in this subparagraph shall require the Recipient to deliver any data the withholding of which is authorized by this clause or data which are specifically identified in this agreement as not subject to this clause. When data are to be delivered under this subparagraph, the Recipient will be compensated for converting the data into the prescribed form, for reproduction, and for delivery.

(k) The Recipient agrees, except as may be otherwise specified in this agreement for specific data items listed as not subject to this paragraph, that the Contracting Officer or an authorized representative may, up to three years after acceptance of all items to be delivered under this contract, inspect at the Recipient's facility any data withheld pursuant to paragraph (h) of this clause, for purposes of verifying the Recipient's assertion pertaining to the limited rights or restricted rights status of the data or for evaluating work performance. Where the Recipient whose data are to be inspected demonstrates to the Contracting Officer that there would be a possible conflict of interest if the inspection were made by a particular representative, the Contracting Officer shall designate an alternate inspector.

3.9 Limited Rights Data (JAN 2004)

(a) The limited rights data subject to the "Rights in Data" clause in this award are listed below. This listing of data, which are asserted by the Recipient to be limited rights data, does not constitute an admission by the Government that the data is in fact limited rights data.

- (1) Data disclosing details of design and manufacturing methodologies, including design correlations and formulae, detailed design calculations, and calculation procedures and techniques;
- (2) Correspondence, including reports, meeting minutes and notes, calculations, and other documentation used for communications within and/or between the Recipient, the Recipient's subcontractors and the

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Technology Licensor's organizations regarding technical and commercial aspects of the technology;

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- (3) Data, reports, or correspondence related to non-project activities, including that related to other similar projects, to the extent such data, reports, or correspondence are utilized in performance of work under this Cooperative Agreement;
 - (4) The theory and associated equations describing the chemical kinetics, thermodynamics and heat, momentum, and mass transfer of the relevant coal gasification, heat recovery, and fuel gas cleaning processing steps from coal feed conveyor to gas turbine fuel flow;
 - (5) Vendor/subcontractor Proprietary data supplied to the Recipient;
 - (6) Detailed gasification process heat and material balance data (flow, pressure, temperature and key chemical components);
 - (7) Detailed Piping and Instrumentation Diagrams (P&ID);
 - (8) Facility operating procedural manuals;
 - (9) Detailed economic data such as labor costs, subcomponent repair and replacement costs, chemical and catalyst consumption;
 - (10) The control system details, including theory and hierarchy, for the coal slurry preparation, coal gasification, heat recovery, and fuel gas cleaning processing steps from coal feed conveyor to gas turbine fuel flow;
 - (11) Economic pro forma calculations; and,
 - (12) Information classified as proprietary or limited rights data under DOE agreements DE-FC21-92MC29310, DE-FC26-97FT34158, DE-AC26-98FT40342, DE-FC26-99FT40659, DE-FC26-02NT41583, to the extent utilized by the Recipient under this cooperative agreement.

- (b) If a patent is issued by the United States Patent and Trademark Office or the patent office of any foreign country based on any information asserted to be limited rights data, the Government will no longer treat any data contained in such issued patent as limited rights data. In addition, if any information asserted to be limited rights data results in or becomes a Subject Invention, as that term is defined in the patent rights clause of this agreement, the Government will only treat such data as limited rights data until the Recipient has filed its initial patent application.
- (c) The Recipient shall not introduce or utilize any limited rights data not identified in paragraph (a) above in the performance of the award without the expressed written permission of the Contracting Officer.
- (d) Minimum technical data deliverable with unlimited rights. Notwithstanding any other provision of this award, the following technical data first produced under this award as a minimum, shall be delivered to the DOE with unlimited rights:

All data listed in 3.8 (g) (4)

3.10 Recipient's Obligations Regarding Delivery of Certain Limited Rights Data

- (a) DOE shall be permitted to call for the delivery of the limited rights data listed in 3.9 Limited Rights Data only in the following circumstances:
 - (1) To defend litigation brought against the Government, including patent infringement, environmental and tort claims;

- (2) To pursue litigation brought by the Government against Excelsior or one of Excelsior's team members or subcontractors growing out of work performed under the Cooperative Agreement;
- (3) In the event the Government requires the information for investigations of fraud, mischarging or similar charges against Excelsior or one of its team members or subcontractors;
- (4) In the event of a catastrophic occurrence at the demonstration facility such as an explosion, accident or hazardous material release, where the Government requires the information to conduct an analysis of the occurrence; or
- (5) In the event DOE requires call-up of such data in connection with any other administrative requirement specifically defined in the cooperative agreement such as a request by the contracting officer pursuant to the patent clause of the agreement for information related to unreported inventions.

Only those portions of limited rights data required for the specific purpose of any access hereunder shall be requested by or delivered to the DOE.

- (b) With respect to any disclosure to a third party in accordance with paragraph (A) above, the DOE will notify the Department of Justice and any other recipient of limited rights data that the Recipient and/or its subcontractors consider the limited rights data to be proprietary and that the Recipient and its subcontractors may be under contractual obligations relating to use and disclosure of such limited rights data. DOE will provide the Recipient sufficient notice to permit Recipient and its subcontractors to obtain appropriate confidentiality undertakings and/or protective orders and will provide reasonable assistance and support to the Recipient and its subcontractors in obtaining such confidentiality undertakings and protective orders.

3.11 Restricted Computer Software (JAN 2004)

The restricted computer software subject to the provisions of the "Rights in Data" clause in this agreement are listed below. This list of software programs, which are asserted by the Recipient to be restricted computer software, does not constitute an admission by the Government that the software is in fact restricted computer software.

- (1) Computer software that includes design correlations and formulae, detailed design calculations, and calculation procedures and techniques;
- (2) Computer software, including theory and hierarchy, containing the control system details for the coal slurry preparation, coal gasification, heat recovery, and fuel gas cleaning processing steps from coal feed conveyor to gas turbine fuel flow;
- (3) Computer code, including theory and equations, that describes the chemical kinetics, thermodynamics and heat, momentum, and mass transfer of the relevant coal gasification, heat recovery, and fuel gas cleaning processing steps from coal feed conveyor to gas turbine fuel flow;
- (4) Computer software containing economic pro forma calculations;
- (5) Control system programming, including programs and software designated as proprietary by vendors and suppliers under nondisclosure agreements with the Recipient; and,
- (6) Information classified as restricted computer software under DOE agreements DE-FC21-92MC29310, DE-FC26-97FT34158, DE-AC26-98FT40342, DE-FC26-99FT40659, DE-FC26-02NT41583, to the extent utilized by the Recipient.

The Recipient shall not introduce or utilize any restricted computer software not identified above without advance written notification of the Contracting Officer.

3.12 Protected Data (JAN 2004)

- (a) The following is a listing of data anticipated to be generated under this award that the Recipient expects will qualify as "Protected Data," as that term is defined in the "Rights in Data" clause in this award. Incorporating this listing of data into this agreement does not constitute a guarantee by the Government that the data will in fact qualify for this designation.

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- (1) Project data disclosing design and manufacturing methodologies;
- (2) Correspondence, including reports, meeting minutes and notes, calculations, and other documentation used for communications within and/or between the Recipient, the Recipient's subcontractors and the Technology Licensor's organizations regarding technical and commercial aspects of the Project;
- (3) Summary Process Flow Diagram (SPFD), including heat and material balance data (flow, pressure, temperature, and key chemical components) of major interconnecting streams, for major Project process steps including the following:
 - (i) Coal handling
 - (ii) Air separation
 - (iii) Slurry preparation
 - (iv) Gasification, high temperature heat recovery (syngas), particulate removal
 - (v) Low temperature heat recovery and fuel gas saturation
 - (vi) Acid gas removal
 - (vii) Sulfur recovery
 - (viii) Tail gas incineration
 - (ix) Combustion turbine generator
 - (x) Heat recovery steam generator
 - (xi) Steam turbine generator/condenser
 - (xii) Make-up/demineralized water
 - (xiii) Cooling water
 - (xiv) Sour water treatment
 - (xv) Gasification plant waste water treatment
- (4) Individual Process Flow Diagrams (IPFD) for each of the major Project process steps;
- (5) Project gasification process heat and material balance data (flow, pressure, temperature and key chemical components);
- (6) Project Piping and Instrumentation Diagrams (P&ID);
- (7) Project facility operating procedural summaries, operating logs and laboratory analysis records.
- (8) Scope of supply specifications for Project equipment and subsystems, and process equipment list identifying equipment manufacturers.
- (9) Detailed physical drawings of the Project and its components.
- (10) Detailed Project facility information related to capital cost for major equipment components, capital cost by work breakdown structure tasks, and fixed and operating costs listed by categories such as labor, fuel and feedstock, chemicals, maintenance, supplies, etc.
- (11) Project economic data such as labor costs, subcomponent repair and replacement costs, chemical and catalyst consumption;
- (12) Project control system details for the coal slurry preparation, coal gasification, heat recovery, and fuel gas cleaning processing steps from coal feed conveyor to gas turbine fuel flow;
- (13) Project economic pro forma calculations;
- (14) Arrangement details of major Project equipment; and,
- (15) Information classified as protected or EPACT data under DOE agreements DE-FC21-92MC29310,

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DE-FC26-97FT34158, DE-AC26-98FT40342, DE-FC26-99FT40659, DE-FC26-02NT41583, to the extent utilized by the Recipient under this cooperative agreement during the protection period.

(b) If a patent is issued by the United States Patent and Trademark Office or the patent office of any foreign country based on any information asserted to be Protected Data, the Government will no longer treat any data contained in such issued patent as Protected Data. In addition, if any information asserted to be Protected Data results in or becomes a Subject Invention, as that term is defined in the patent rights clause of this agreement, the Government will only treat such data as Protected Data until the Recipient has filed its initial patent application.

(c) Notwithstanding paragraph (j) of article 3.8, the DOE shall be permitted to call for delivery of the Protected Data listed in items (1), (5), (6), (11), (12), (13) and the facility operating procedural summaries in item (7) above only under the circumstances listed in article 3.10. However, DOE reserves the right to inspect such data at the Recipient's facility, to perform evaluations and/or analyses of such data at the Recipient's facility, and to publish the results of any evaluations or analyses to the extent permitted elsewhere in this agreement.

3.13 Availability of contract and other data. (DEC 2003)

(a) The Recipient will, for the entire period of Recipient's participation in the project at the Facility (including operation of the Facility) and for three years thereafter, whether or not under a Government Cooperative Agreement, keep and maintain all technical data, including limited rights data and data obtained from subcontractors and licensors, necessary to construct and/or operate the Facility, and all data including business and financial data necessary to evaluate the technical and economic operation of the Facility. During the entire period of construction and/or operation of the Facility, regardless of whether the Government participates past Design, the Recipient shall permit the Government and its representative the right to inspect at the Facility any data kept and maintained pursuant to this paragraph. The Recipient shall, after termination of the Government's participation in the project at the facility, periodically deliver reports to the Government on the construction and operation of the facility, which reports shall not include limited rights data.

(b) If the Recipient withdraws from this Cooperative Agreement or defaults after Design or Construction, the Government shall have the right to have all data kept and maintained pursuant to Paragraph (a) above, delivered to the Government or otherwise disposed of as the Contracting Officer shall direct upon such termination. Any limited rights data delivered pursuant to this paragraph shall be marked as provided in Paragraph (h)(2) of the Rights in Data – Programs Covered Under Special Data Statues clause with the addition to the legend thereof after (a)(5) as follows: (6) Use by Government or others on its behalf to the extent necessary to enable the Government to complete Construction and/or Operations. Any Protected Data delivered pursuant to this paragraph shall be marked as provided in Paragraph (g)(1) of the Rights in Data – Programs Covered Under Special Data Statues clause with the addition after (g)(2)(b) of the following: "(c) Use by the Government or others on its behalf, to the extent necessary to enable the Government to complete Construction and/or Operations."

(c) The Recipient agrees to and does hereby grant to the Government or others acting on its behalf, an irrevocable nonexclusive paid-up license in and to any limited rights data of the Recipient which are incorporated or embodied in the design or construction or utilized in the operation of the Facility: (1) to practice, or to have practiced, by or for the Government at the Facility, and (2) to transfer such license with the transfer of that Facility. Further, the Recipient agrees to obtain an equivalent license from its contractors, subcontractors, and licensors, if any. The license granted pursuant to this subparagraph shall be for the limited purpose of completion, repair or operation of the demonstration facility.

3.14 Commercialization of the Demonstrated Technology

Recipient Agrees to use reasonable efforts to commercialize the gasification technology and other associated technologies demonstrated at the project under this Cooperative Agreement by providing information and site access, under suitable nondisclosure agreements, to parties that have an interest in licensing or otherwise utilizing these technologies.

3.15 52.227-23 Rights to Proposal Data (Technical). (JUN 1987)

Except for data contained [no exception], it is agreed that as a condition of award of this contract, and notwithstanding the conditions of any notice appearing thereon, the Government shall have unlimited rights (as defined in the "Rights in Data - General" or the "Rights in Data - Programs Covered Under Special Data Statutes" clause contained in this contract) in and to the technical data contained in the proposal dated June 15, 2004, upon which this contract is based.

SECTION IV - LIST OF ATTACHMENTS

Attachment A -- Statement of Project Objectives

Attachment B -- Federal Assistance Reporting Checklist

Attachment C -- Budget Page(s)

Attachment D -- Instructions for Completion of Invoices

Attachment E -- Repayment Agreement

ATTACHMENT A – STATEMENT OF PROJECT OBJECTIVES

“Mesaba Energy Project”

A. Scope of Work

The scope of work encompasses all necessary steps to define, characterize, evaluate, design, construct, start-up, demonstrate and operate an Integrated Gasification Combined Cycle (IGCC) electric power generating plant.

B. Objectives

The overall objective of the project is to demonstrate technologies to produce electricity via the IGCC process, including advanced gasification and air separation systems, feedstock flexibility, improved environmental performance, and improved thermal efficiency. Specifically, the goals of this U.S. Department of Energy (DOE) Clean Coal Power Initiative (CCPI) project are to demonstrate the following features and technologies to improve and advance IGCC processes toward commercial acceptance:

- **Increased Capacity** – Demonstrate more than double the generating capacity of the Wabash River Coal Gasification Repowering Project (Wabash), or nominally 600 MWe (net).
- **Advanced Gasifier** – Demonstrate a significantly more advanced full-slurry quench (FSQ) multiple-train gasifier system having an operational availability of about 90% or better.
- **Air Separation Unit (ASU)** – Demonstrate a configuration to (a) extract bleed air from the combustion turbine to reduce the parasitic load of the main air compressor in the ASU, increasing net plant output and reducing capital cost, and (b) recycle nitrogen extracted from air entering the ASU for injection into the combustion turbine to reduce formation of nitrogen oxides by reducing the flame temperature of the combustor and the time that combustion gases remain at elevated temperatures.
- **Feedstock Flexibility** – Demonstrate greater feedstock flexibility with the capability of gasifying bituminous coal (e.g., Illinois No. 6), sub-bituminous coal (e.g., Powder River Basin), blends of sub-bituminous coal and petroleum coke, and/or other combinations of these feedstocks.
- **Improved Environmental Performance** – The Project is intended to improve upon the previous clean coal Wabash River Coal Gasification Repowering Project by deploying processes and technologies that would make it among the cleanest coal-based power generating plants in the world. Emission levels for criteria pollutants (sulfur dioxide, nitrogen oxides, carbon monoxide, volatile organic compounds, and particulate matter) and mercury are expected to be equal to or below those of the lowest emission rates for utility-scale, coal-based generation fueled by similar feedstocks. In addition, carbon dioxide emissions are expected to be 15 to 20% lower than the current average for U.S. coal-based power plants fueled by similar feedstocks.
- **Thermal Efficiency** – Demonstrate a design heat rate of about 8,600 BTU/kilowatt-hour when using bituminous coal.
- **Reference Plant** – Demonstrate, from a broad perspective, the commercial development, engineering and design necessary to construct a large feedstock-flexible reference plant for IGCC, thus establishing a standard replicable design configuration with a sound basis for providing firm installed cost information for future commercialization.

C. Success Criteria

The success of this CCPI project will be evaluated based on multiple independent criteria, as follows:

- Development of a project technical and financial information package and subsequent securing of financing from Lenders (i.e., financial close);
- Construction of the project IGCC plant;
- Operation of the project IGCC plant at the design power capacity and with multiple feedstocks (e.g., bituminous and sub-bituminous coals);
- The degree to which the objectives and goals identified in Section B, above, are achieved; and,

- The degree to which repayment in accordance with the associated Repayment Agreement is achieved.

D. Tasks to be Performed

The Recipient's Team shall perform the project in three (3) budget periods as follows:

- Budget Period 1 – Project Definition and Development;
- Budget Period 2 – Plant Construction;
- Budget Period 3 – Plant Demonstration and Operations.

The first budget period, Budget Period 1, shall have duration of 23-months and shall consist of two tasks: Task 1.0, Project Definition and Development, and Task 4.0, DOE Project Reporting and Management. At least 90 days before the end of Budget Period 1, the Recipient shall submit a Continuation Application, as a non-competitive application for an additional budget period, to the DOE Project Officer identified in Block 11 and the DOE Award Administrator identified in Block 12 of the Notice of Financial Assistance Award (see Article 2.11, "Continuation Application and Funding" contained in Section II – Special Terms and Conditions). The Continuation Application shall include the following information:

- 1) A Topical Report on the progress towards meeting the objectives of the project. After review and comment by the appropriate DOE representatives, the Recipient shall modify the report to become the final Topical Report on the project activities to date. If the Government elects not to continue into the next budget period, this report will become the final report for the project. The report shall include:
 - a. A description of the work performed under each task and subtask;
 - b. Significant findings, conclusions or developments;
 - c. Data, identified in Section 3.8(g)(4) of the Cooperative Agreement, if generated, including major equipment lists by vendor and identification of any and all equipment subject to DOE repayment agreements; and,
 - d. A detailed description of the Recipient's plans for the conduct of the project during the upcoming budget period, if there are changes from the DOE approved agreement;
- 2) An estimate of any unobligated balances remaining at the end of the budget period. If the remaining unobligated balance is estimated to exceed 20 percent of the funds available for the budget period, explain why the excess funds have not been obligated and how they will be used in the next budget period;
- 3) A completed Budget Form SF424A and a detailed budget pursuant to 10 CFR 600.26, with evidence of funding commitment and other supporting justification for the upcoming budget period if additional funds are requested, a reduction of funds is anticipated, or a detailed budget for the upcoming budget period was not approved at the time of award;
- 4) A detailed cost proposal for Budget Period 2, an estimated total cost for Budget Period 3, and a detailed Financing/Funding Plan for both Budget Period 2 and Budget Period 3; and,
- 5) Other project-related documentation as may be necessary to support continuation of the project.

The second budget period, Budget Period 2, shall have duration of 46-months and shall consist of two tasks: Task 2.0, Plant Construction, and Task 4.0, DOE Project Reporting and Management. At least 90 days before the end of Budget Period 2, the Recipient shall submit a Continuation Application, as a non-competitive application for an additional budget period, to the DOE Project Officer identified in Block 11 and the DOE Award Administrator identified in Block 12 of the Notice of Financial Assistance Award (see Article 2.11, "Continuation Application and Funding" contained in Section II – Special Terms and Conditions). The Continuation Application shall include the following information:

- 1) A Topical Report on the progress towards meeting the objectives of the project. After review and comment by the appropriate DOE representatives, the Recipient shall modify the report to become the final Topical Report on the project activities to date. If the Government elects not to continue into the next budget period, this report will become the final report for the project. The report shall include:
 - a. A description of the work performed under each task and subtask;
 - b. Significant findings, conclusions or developments;
 - c. Data, identified in Section 3.8(g)(4) of the Cooperative Agreement, if generated, including major equipment lists by vendor and identification of any and all equipment subject to DOE repayment

- agreements; and,
- d. A detailed description of the Recipient's plans for the conduct of the project during the upcoming budget period, if there are changes from the DOE approved agreement;
 - 2) An estimate of any unobligated balances remaining at the end of the budget period. If the remaining unobligated balance is estimated to exceed 20 percent of the funds available for the budget period, explain why the excess funds have not been obligated and how they will be used in the next budget period;
 - 3) A completed Budget Form SF424A and a detailed budget pursuant to 10 CFR 600.26, with evidence of funding commitment and other supporting justification for the upcoming budget period if additional funds are requested, a reduction of funds is anticipated, or a detailed budget for the upcoming budget period was not approved at the time of award;
 - 4) A detailed cost proposal for the budget period and, if there are changes, a revised Financing/Funding Plan; and,
 - 5) Other project-related documentation as may be necessary to support continuation of the project.

The third and final budget period, Budget Period 3, shall have duration of 12-months and shall consist of two tasks: Task 3.0, Plant Demonstration and Operations, and Task 4.0, DOE Project Reporting and Management. The total project duration, including Budget Periods 1, 2, and 3 is 81-months. The Recipient shall prepare, for review and comment, a draft Final Scientific/Technical Report covering the progress over the entire project. This report shall follow guidelines set forth in the Cooperative Agreement. After review and comment by the appropriate DOE representatives, the Recipient shall modify the report to become the Final Scientific/Technical Report on the entire project.

Budget Period 1 – Project Definition and Development

Task 1.0 – Project Definition and Development

The duration of Task 1.0 will be 23-months. The objectives of this task are to perform process definition, National Environmental Policy Act (NEPA) activities, state environmental permitting, and preliminary engineering, procurement and construction (EPC) work for the facility, including Front-End-Engineering & Design (FEED) and estimates of required capital investments. Other objectives include selection of a final site for the project plant, completing the power purchase agreement approval process, selection of the combustion turbine, selection of the feedstock source and long-term fuel supply arrangements, initiation of environmental permitting-related activities, and submission of the generator interconnect and transmission delivery request to the Midwest Independent Transmission System Operator (MISO).

Subtask 1.01 – Site Strategic Planning

The Recipient shall finalize a site option agreement with a viable counterparty. The Recipient shall determine the specific location/site of the IGCC electric power generating plant, including the requirements for any ancillary services such as grading, access roads, utilities, storage facilities and other infrastructure requirements.

Subtask 1.02 – Environmental Site Licensing

The Recipient shall complete all environmental work, such as air, water and land use permitting that will not be completed as part of the NEPA or Minnesota power plant siting process. The Recipient shall conduct all activities necessary for permit scoping, preparation and initiation. The Recipient shall also provide necessary information and support for the Federal NEPA process.

Subtask 1.03 – Transmission Route Licensing

The Recipient shall submit a generator interconnect agreement to MISO and initiate necessary transmission studies to support the transmission services request.

Subtask 1.04 – Preliminary Engineering and Design

The Recipient shall conduct plant optimization studies in support of making two primary determinations early in the Project Definition phase – selection of the combustion turbine for the project and identification of the project fuel source(s).

The Recipient shall complete a flow diagram/balance that identifies and quantifies all of the solid and liquid flows into and out of each piece of equipment of the plant. All solids and liquids shall be differentiated.

The Recipient shall monitor the progress of next generation syngas combustion turbine progress towards commercialization, and shall make a final selection of combustion turbines.

The Recipient shall complete a preliminary design of the IGCC electric power generating plant that identifies all major pieces of equipment and flow streams. After the preliminary design has been completed, the Recipient shall provide it to DOE for review and comment. Any suggested modifications will be incorporated before it is used as the basis of the final detailed engineering design. The final preliminary design shall specify sampling and control points for process control. The Recipient shall generate a detailed equipment list that includes all major pieces of equipment and relevant size specifications and/or materials of construction, and supplier.

Major components of the project may include, but may not necessarily be limited to feedstock acceptance and storage, slurry preparation, oxygen preparation via the Air Separation Unit (ASU), feedstock gasification and slag handling, synthesis gas preparation (i.e., particulate matter removal, char re-injection, water scrubbing, acid gas removal, and mercury removal), sulfur recovery, synthesis gas combustion (using nitrogen dilution to reduce formation of NO_x) with concomitant electricity production (using combustion turbine generators) and electricity production via heat recovery (using steam turbine generators).

Subtask 1.05 – Fuel Supply

The Recipient shall finalize fuel purchase and long-term arrangements contracts, if necessary under the terms and conditions of the project's Power Purchase Agreement (PPA) and financing documents. At a minimum, the Recipient shall establish a fuel plan to support the secure economic purchase of fuel to operate the plant.

Subtask 1.06 – Power Sales/ Power Purchase Agreement (PPA)

The Recipient shall seek and negotiate appropriate PPAs or other regulatory approved offtake arrangements to facilitate the construction, financing and operations of the project.

Subtask 1.07 – Public Utilities Commission (PUC) Case

The Recipient shall prepare, then, if necessary, file and seek approval of its long-term PPA or other offtake arrangements with the Minnesota PUC. The PPA will not depend on merchant cash flows for debt service. The Recipient shall also maintain and develop interaction with all necessary governmental bodies to achieve the commercialization of the project.

Subtask 1.08 – Public Affairs

The Recipient shall develop and maintain relationships, as appropriate, with the public and media at-large to facilitate the commercialization of the project.

Subtask 1.09 – Financing

The Recipient shall provide DOE with the financial model, and updates, for the project supporting fund raising efforts, and including all assumptions, financial projections, balance sheet, income statement, and cash flows for the project.

The Recipient shall negotiate and establish funding for the design, construction, and commercial operations of the project. The Recipient shall put in place all the necessary contractual components for financing, in a form acceptable to Lenders, other potential funds suppliers, and DOE, including:

- Fixed price turn-key construction contract(s) with a full guarantee package or "wrap" sufficient for project finance purposes;
- Long-term PPA or other appropriate offtake arrangements (see Subtask 1.06);
- Long-term fuel supply agreement, if required as part of the PPA and financing, or in lieu of this, a fuel plan (see Subtask 1.05);
- If part of the transaction, an Operations & Maintenance (O&M) agreement with a qualified operator to operate and maintain the facility;
- Transmission arrangements and interconnection (see Subtask 1.03);
- Acceptable site (see Subtask 1.01 and 1.02);
- Technology agreement establishing rights to use all relevant technology;
- Required permits and licenses; and,
- All necessary financing documents, which may include loan and collateral agreements, bond documents, inter-creditor agreements, shareholder agreements, trustee agreements and other agreements necessary to accomplish the financing.

The Recipient shall arrange for the preparation and delivery of independently prepared reports required for the financing effort, which may include:

- A satisfactory report from a fuel and/or power market consultant analyzing the prospective fuel markets and/or electricity market environment for the Mesaba Energy Project;
- A satisfactory report from a nationally recognized independent engineer evaluating the technical aspects of the project; and,
- A satisfactory report from a nationally recognized insurance advisor evaluating the adequacy of the insurance package.

Subtask 1.10 – Insurance

The Recipient shall negotiate and establish appropriate insurance coverage to meet all its contractual requirements.

Subtask 1.11 – General Support

The Recipient shall develop and implement the Project Management Plan, putting into place the necessary project management procedures to effectively monitor and control project activities.

Budget Period 2 – Plant Construction

Task 2.0 – Plant Construction

The duration of Task 2.0 will be 46-months. The objective of Task 2.0 is to conduct final design work, construct and conduct initial start-up of the facility, conduct acceptance testing, including environmental testing, and demonstrate a shortened construction schedule for IGCC facilities.

Subtask 2.01 – Final Detailed Engineering Design

The Recipient shall complete the final construction-level detailed process flow diagrams/sheets for the IGCC power generation plant. Using the preliminary design approved from Subtask 1.04, the Recipient shall complete the final design for the IGCC power generation plant, including gasification and combined cycle balance of plant (BOP), and shall generate the appropriate engineering drawings necessary to complete the task. The drawings shall include site layout, general equipment arrangement, plan and elevation drawings, wiring and piping arrangement as well as the location of access roads, conveyors,

drainage and other infrastructure requirements. The drawings shall be submitted to the DOE for review and comment. Upon completion of the detailed design, the Recipient shall prepare a detailed construction estimate for a turnkey IGCC power generation plant. The cost estimate and detailed drawings shall be compiled into an engineering, procurement, construction, and lump sum turnkey package.

Subtask 2.02 – Update Project Management Plan and Initial Site Preparation

The Recipient shall update the Project Management Plan and refine its control process as needed based on lessons learned from previous activities. The Recipient shall perform initial site grading and put into place the construction infrastructure.

Subtask 2.03 – Major Systems/Processes

The Recipient shall procure and construct the following process systems:

- Air Separation Unit (ASU);
- Feed handling (coal yard);
- Slurry preparation process area;
- Gasification and heat recovery;
- Syngas cleaning, low temperature heat recovery and acid gas removal systems;
- Sulfur recovery unit;
- Power block equipment, combustion gas turbines, steam turbine, and condenser; and,
- BOP equipment, piping, and instrumentation installation once critical path components (condenser, turbine/generator, and HRSG) are set.

Subtask 2.04 – Start-Up & Commissioning

The Recipient shall develop a Plant Start-up Test Plan and submit the plan to DOE for review and comment. At the completion of construction, the Recipient shall commence plant start-up testing in accordance with the approved plan. The testing will begin at the component level and progress through system and integrated plant operations. Upon successful completion of start-up testing, systems will be sequentially turned over to the plant operator. Start-up testing of major systems will begin with the combined cycle and BOP followed by the ASU, and testing of each of the three gasifier trains, culminating in an integrated operations test of all components and systems.

Subtask 2.05 – Operational Demonstration Test Plan

The Recipient shall develop an Operational Demonstration Test Plan and submit the plan to DOE for review and comment. The plan shall encompass activities that demonstrate the objectives set forth in Section B, Objectives, of this Statement of Project Objectives.

Budget Period 3 – Plant Demonstration and Operations

Task 3.0 – Plant Demonstration and Operations

The duration of Task 3.0 will be 12-months. The Recipient shall implement the Operational Demonstration Test Plan approved from Task 2.05 and ascertain and document the results of the demonstration in relation to the project objectives. It is also anticipated that the Project will demonstrate improved life for a state-of-the-art refractory, operation of the hybrid cyclone – particulate filter system, and the impact of other miscellaneous plant improvements over the demonstration period.

Subtask 3.01 – Fuel Flexible Design

The Recipient shall demonstrate that the Mesaba Energy Project is capable of accepting and converting to syngas various feedstocks.

Subtask 3.02 – IGCC Operations

As operational experience on the Mesaba Energy Project units is accumulated, the Recipient shall tune systems and components for optimized performance and corrective maintenance.

Subtask 3.03 – Environmental & Operational Reporting

Through the demonstration period and afterward, the Recipient will ensure environmental and operational performance of the Mesaba Energy Project according to all laws and regulations.

Other Tasks and activities that span budget periods (Budget Periods 1, 2 and 3)

Task 4.0 – DOE Project Reporting and Management

Task 4.0 shall occur over the entire 81-month life of the project. This task includes reporting, planning and management efforts relevant to the other tasks as well as the final Project report and economic summary. The task also provides the project management oversight needed to keep the Mesaba Energy Project moving in sequence, on time and within budget constraints, including accurately tracking and reporting progress and potential problems to the DOE and other stakeholders.

Subtask 4.01 – Financial and Technical Progress Reports

The Recipient shall manage and report the financial and technical progress of the project and submitted a report to the DOE as required on a quarterly basis.

Subtask 4.02 – Continuation Application Preparation

The Recipient shall prepare and submit (no later than 90 days prior to the end of the current budget period) a Continuation Application, in accordance with the requirements of this Cooperative Agreement, for review by the DOE.

Subtask 4.03 -- Economic Analyses and Final Report

As part of the Final Report for the project, the Recipient shall complete an economic analysis of the Mesaba Energy Project IGCC electric power generating plant. The analysis shall include actual operating costs incurred during continuous operation as well as the capital costs.

E. Project Milestone Schedule:

Task 1.0

- 1.01 – Site Strategic Planning
- 1.02 – Environmental Site Licensing
- 1.03 – Transmission Route Licensing
- 1.04 – Preliminary Engineering and Design
- 1.05 – Fuel Supply
- 1.06 – Power Sales/ PPA
- 1.07 – PUC Case
- 1.08 – Public Affairs
- 1.09 – Financing
- 1.10 – Insurance
- 1.11 – General Support
- Other – Submission of Budget Period 2 Continuation Application

Task 2.0

- 2.01 – Final Detailed Engineering Design

- 2.02 – Updated Project Management Plan and Initial Site Preparation
- 2.03 – Major Systems/ Processes
- 2.04 – Start-Up & Commissioning
- 2.05 – Operational Demonstration Test Plan
- Other – Submission of Budget Period 3 Continuation Application

Task 3

- 3.00 – Operational Demonstration Test
- 3.01 – Fuel Flexible Design
- 3.02 – IGCC Operations
- 3.03 – Environmental & Operational Reporting
- Other – Submission of Final Report

F. Deliverables

The Recipient shall submit all deliverables listed on the Federal Assistance Reporting Checklist through the official NETL document control system, in accordance with this Cooperative Agreement, for DOE review and approval.

The Recipient shall submit all other deliverables, listed below, directly to the DOE Project Officer identified in Block 11 and the DOE Award Administrator identified in Block 12 of the Notice of Financial Assistance Award. *[Note that none of the following deliverables are to be submitted through the official NETL document control system and may be rejected without reaching the DOE Project Officer nor the DOE Award Administrator if submitted through NETL document control.]*

- Continuation Applications;
- NEPA Environmental Volume and related information;
- Microsoft Excel-based Financial Model – current model at the time of signing the Cooperative Agreement and significant updates, such as those at the time of signing significant project agreements and at financial close;
- Preliminary and Final Plant Design Report;
- Detailed Equipment List;
- Financing Reports;
- Project Management Report;
- Plant Startup Test Plan;
- Operational Demonstration Test Plan;
- Weekly e-mail project highlights/updates – The Recipient shall e-mail the DOE Project Officer, by close of business each Wednesday, summary project information sufficient to allow the DOE Project Manager to report weekly project status and upcoming planned activities, including meetings and outreach, to NETL and DOE Headquarters senior managers. Depending on the significance of the weekly update or the nature of the information, the DOE Project Officer’s report to DOE senior management could take one or more of the following forms:
 - High-Level Secretary of Energy Awareness: These types of items consist of breaking issues, accomplishments, and communication about any upcoming decisions or occurrences that are likely to happen. Provide: a) a lead sentence or headline, b) answer each of the following questions: Who? What? When? So What? Is there media interest?
 - Press Inquiries: a) Provide date of the interview request (these should cover the upcoming 3-week period); b) Identify the topic of the interview; and, c) Identify the contact person and phone number.
 - 30-60-90 Day Report: If you know of an event involving regional, state or national appeal, provide: a) the date of the event, b) describe the event in 3-4 sentences, c) estimate the number and type of participants.
 - Items of Interest: These are items to report progress, deliverable accomplishment, or milestone achievement. These are more or less the every-week items and they shall include a concise 4-5 sentence narrative of the work accomplished during the past week that is worthy upper management awareness.

- Earned Value Management (EVM) data – Once a month, typically but not necessarily linked with invoice submission, the Recipient shall include in their e-mail update current Earned Value (EV) management data as follows:
 - Planned Value (PV) or Budgeted Cost of Work Scheduled (BCWS)
 - Earned Value (EV) or Budgeted Cost of Work Performed (BCWP)
 - Actual Cost (AC) or Actual Cost of Work Performed (ACWP)
 EVM data should be reported for the period and cumulative for the project. The baseline PV and AC incurred should be reported for the previous period. The projected PV versus EV for the upcoming month should also be assessed. The Recipient shall provide the DOE summary level access/overview of the project management tool (e.g., Microsoft Project) at the Statement of Project Objectives task/subtask level in order to monitor project operations and status.
- Project Management Meetings – The Recipient shall allow for project management meetings, as needed, either via phone conference, web/net meetings, or face-to-face, to discuss progress, issues, accomplishments, deliverables, milestones, the work plan, etc.
- Schedule (Gantt Chart) – The Recipient shall maintain a Gantt Chart (Attachment A2) and report on the project progress through updates to the Gantt Chart submitted in conjunction with the Quarterly Technical Progress Report required by the Federal Assistance Reporting Checklist, NETL Form 540.3-1.

G. Briefings

The Recipient shall prepare detailed briefings for presentation to the DOE Project Officer at a NETL site or at a different location as designated by the DOE Project Officer. The briefings shall be given by the Recipient to explain the plans, progress, and results of the project effort. The first briefing shall be presented within 30 days after the cooperative agreement award. Additional briefings shall be presented at least 45 days before completion of the current Budget Period. The final briefing shall be presented at least 45 days prior to the award is due to expire.

The Recipient shall also provide a detailed briefing associated with the 75% or otherwise appropriate design point.

H. Post-Completion Review

Within two (2) years after completion of the demonstration project, the Recipient shall participate with DOE in a post-completion project review meeting. The time and location of the meeting will be established by agreement of the Parties. The purpose of the meeting is to review the success of the project as well as any problems that may have arisen since project completion.

DOE F 4600.2
(10/2001)
(All Other Editions are Obsolete)

ATTACHMENT B

**U.S. Department of Energy
FEDERAL ASSISTANCE REPORTING CHECKLIST**

| | |
|--|--|
| 1. Identification Number: DE-FC26-06NT42385 | 2. Program/Project Title: MESABA ENERGY PROJECT |
| 3. Recipient: MEP 1, LLC | |

| 4. Reporting Requirements: | Frequency | No. of Copies | Addresses |
|--|-----------|-------------------------------|---|
| I. MANAGEMENT REPORTING | | | |
| <input checked="" type="checkbox"/> Progress Report | Q | Electronic version to NETL> | FITS@NETL.DOE.GOV |
| <input checked="" type="checkbox"/> Special Status Report | A | | |
| II. SCIENTIFIC/TECHNICAL REPORTING | | | |
| <input checked="" type="checkbox"/> Final Scientific/Technical Report DOE F 241.3 | FG | Electronic version to E-link> | http://www.osti.gov/elink-2413 (Note-software/manual must be sent to award administrator-see instructions under section B-software) |
| <input checked="" type="checkbox"/> Topical Report DOE F 241.3 | A | | |
| <input checked="" type="checkbox"/> Journal Articles/Conference Papers/Proceedings DOE F 241.3 | A | | |
| <input type="checkbox"/> DOE 421.4, Software/Manual DOE F 241.3 | | | |
| <input type="checkbox"/> Conference Record DOE F 241.3 | | | |
| III. FINANCIAL REPORTING | | | |
| <input checked="" type="checkbox"/> SF-269 or SF-269A, Financial Status Report | Q, FG | Electronic Version to NETL> | FITS@NETL.DOE.GOV |
| <input type="checkbox"/> SF-272, Federal Cash Transactions Report | | | |
| IV. CLOSEOUT REPORTING | | | |
| <input checked="" type="checkbox"/> DOE F 2050.11, Patent Certification | FC | Electronic Version to NETL> | FITS@NETL.DOE.GOV |
| <input checked="" type="checkbox"/> NETL F 580.1-9, Property Certificate | | | |
| <input type="checkbox"/> SF-120, Report of Excess Personal Property | | | |
| V. OTHER REPORTING | | | |
| <input type="checkbox"/> NETL F 580.1-8, Annual Report of Property in the Custody of Contractors | | | |
| <input type="checkbox"/> NETL F 580.1-25, High Risk Property Report | A | | |
| <input checked="" type="checkbox"/> Environmental Compliance Plan | A | | |
| <input checked="" type="checkbox"/> Environmental Monitoring Plan | Q | | |
| <input checked="" type="checkbox"/> Environmental Status Report | | | |
| <input checked="" type="checkbox"/> Other SEE STATEMENT OF PROJECT OBJECTIVES | | | |

FREQUENCY CODES AND DUE DATES:

A - As required; see attached text for applicability.
 FG - Final; within ninety (90) calendar days after the project period ends.
 FC - Final - End of Effort.
 Q - Quarterly; within thirty (30) calendar days after end of the calendar quarter or portion thereof.
 S - Semiannually; within thirty (30) calendar days after end of project year and project half-year.
 YF - Yearly; 90 calendar days after the end of project year.
 YP - Yearly Property - due 15 days after period ending 9/30.

5. SPECIAL INSTRUCTIONS:

* Reports/Products must be submitted with appropriate DOE F 241. The 241 forms are available at www.osti.gov/elink
 The forms identified in the checklist are available at <http://grants.pr.doe.gov>. Alternate formats are acceptable provided the contents remain consistent with the form.

GENERAL INSTRUCTIONS FOR THE PREPARATION AND SUBMISSION OF ELECTRONIC REPORTS (JAN 2005)

The Recipient must prepare and submit all scientific/technical reports (including conference papers/proceedings, journal articles, software, and topical reports, if applicable) via E-link at <http://www.osti.gov/mlink-2413> [see specific instructions below regarding form submittal and format]. **If you have any technical problems with using E-Link or DOE Form 241.3, calls should be directed to OSTI at 865-576-1223. However, if your question is related to other submission issues, you should contact the award administrator identified under block 12 of the DOE F 4600.1 Notice of Financial Assistance Award face page.**

For all other reports indicated on the "Federal Assistance Reporting Checklist" (including management, financial, closeout and other reporting), the Recipient must prepare and submit these via the internet at FITS@NETL.DOE.GOV.

Successful completion of this award is contingent upon submittal of the reports or items specified on the "Federal Assistance Reporting Checklist" in accordance with the following instructions:

Failure to follow these instructions can delay data entry of the report(s) into the **NETL FEDERAL INFORMATION TRACKING SYSTEM (FITS)** and result in the report being lost or considered delinquent.

The level of detail the Recipient provides in the reports must be commensurate with the scope and complexity of the effort and must be as delineated in the guidelines and instructions contained herein. The prime Recipient must be responsible for acquiring data from any contractors or sub recipients and ensuring that any information submitted is compatible with the requirements of the DOE.

GUIDELINES FOR ELECTRONIC SUBMISSION AND FILE FORMAT OF NON-SCIENTIFIC/TECHNICAL REPORTS (includes management, financial, closeout and other reporting).

Production of high-quality, electronic documents is dependent on the quality of the input that is provided. Thus, the Recipient must submit an electronic version of each report.

ELECTRONIC REPORTS MUST BE SUBMITTED IN THE ADOBE ACROBAT PORTABLE DOCUMENT FORMAT (PDF). ELECTRONIC REPORTS SUBMITTED IN A FORMAT OTHER THAN ADOBE WILL BE RETURNED AND THE REPORT CONSIDERED DELINQUENT. IN ADDITION, THERE CAN BE NO RESTRICTIONS ON THE PDF FILE SUBMITTED THAT WOULD AFFECT OUR ABILITY TO OPEN OR EDIT THE REPORT DOCUMENT. THEREFORE, THE ONLY SECURITY METHOD THAT WILL BE ACCEPTED IS THE ADOBE ACROBAT "NO SECURITY" OPTION. THIS WILL ENABLE US TO PROPERLY INDEX AND PROCESS REPORT FILES.

Each report must be one integrated file that contains all text, tables, diagrams, photographs, schematics, graphs, and charts. Files must not be write-protected or encrypted in any manner.

The electronic file(s) must be submitted via the Internet at: FITS@NETL.DOE.GOV. An e-mail message sent in conjunction with the file **must** contain the following information:

DOE Award Number

Type of Report(s)
Frequency of Report(s)
Reporting Period (if applicable)
Name of submitting organization
Name, phone number and fax number of preparer

1 MANAGEMENT REPORTING

PROGRESS REPORT

The Progress Report must provide a concise narrative describing the current status of work. The report allows Recipients to communicate developments, achievements, changes and problems. The report must include the following information:

1. The DOE award number and name of the recipient.
2. The project title and name of the project director/principal investigator.
3. Date of report and period covered by the report.
4. Executive Summary- A well organized summary that highlights the important accomplishments and new knowledge realized from the project during the reporting period. This summary must be more comprehensive than the traditional "abstract" and identify noteworthy advancements in research, design, manufacture or commercialization of technology developments. Also, summarize important breakthroughs that resolve critical science and technology risks or development barriers.
5. The Recipient enters a brief narrative discussion of the following topics: approach changes; performance variances, accomplishments, or problems; open times; and status assessment and forecast. Each of these topics is addressed, as appropriate, for a given reporting period and the report is submitted periodically, as required, during the life of the project
6. Baseline and Status Reports. The Baseline Plan is a report which is used to present projected cost and activity data. The Baseline Plan presents discrete, measurable units of the proposed work. The plan will provide a specific outline of what the Recipient intends to do through a Work Breakdown Structure and the time and cost involved. The cost data to be entered must depict projected total costs for the life of the project on a monthly basis broken down by each element of the Work Breakdown Structure. The activity data required are identification of tasks required to complete the project according to the Work Breakdown Structure and a delineation of the project's major milestones. This plan will be developed and submitted to serve as the standard against which status and progress can be measured during the performance period.

The Status Report shall provide the performance information required to determine program effectiveness and the information which DOE requires to maintain accountability for public funds. The report must show approved budget by budget period and actual costs incurred. If cost sharing is required costs must be broken out by DOE share, awardee share, and total costs. The report must show actual costs, schedule progress, and work completed to date. This data must be provided for each reporting period, broken down by month for each element of the Work Breakdown Structure.

Milestones, anticipated completion dates, and actual completion dates must be listed to show schedule status. The schedule status must identify any milestones that were not met during the reporting period and reasons why the established milestones were not met. Explanations should also provide an approximate date when the milestone will be met. Awardees may use project management software, such as Microsoft Project, to measure and report cost and schedule status.

When the status report is compared with the Baseline Plan, accomplishments can be noted, problems become apparent, and corrective action can be taken. The Status Report is a report on which the Recipient provides cost and activity data for each reporting period relative to the Baseline Plan. The information should be displayed so that the baseline for the project is clear and the status of the project relative to the baseline is clear. The report may consist of more than one page as necessary.

7. Results and Discussion - A detailed discussion of the progress performance. It is extremely important that this section includes enough relevant data, especially statistical data, to allow the project manager to justify the conclusions. With the relevant data, explain how the data was interpreted and how it relates to the original purpose of the research. Be concise in the discussion on how this research effort solved or contributed to solving the original problem. When investigation methods and/or procedures are being utilized for the first time, they shall be described in detail. This description shall contain detailed information on equipment and procedures utilized, as well as providing a rationale for their use and the accuracy of the method.
8. Conclusion - The conclusion should not simply reiterate what was already included in the "Results and Discussion" section. It should, however, summarize what has already been presented, and include any logical implications of how the successes are relevant to technology development in the future. This is extremely important, since "relevancy" continues to be a criterion of the program.

This section should not contain any trade secrets, business sensitive or classified data, or other information not subject to public release. If such information is important to reporting project progress, it should be presented in a separate appendix, following the instructions in the clause entitled "Supplemental Guidelines" regarding submission of a separate appendix for this type of restricted data.).

9. A summary of all of the significant accomplishments during this reporting period. An "accomplishment" is a significant development or finding that advances the state-of-the-art with respect to the technology of interest or significantly contributes to the understanding of a concept or technology.
10. Actual or anticipated problems or delays and actions taken or planned to resolve them. Identify any event causing a significant schedule slippage or cost growth; an environmental, safety, or health violation; or the achievement of or problems encountered for an important performance objective.
11. A description of any technology transfer activities accomplished during this reporting period. Identify and describe any activities to transfer research results or developed technology to other research stakeholders or users of the technology.

SPECIAL STATUS REPORT

The recipient must report the following events to the DOE Project Officer by e-mail as soon as possible after they occur: The e-mail correspondence should include:

1. Recipient's name and address;
2. Award title and number;
3. Date;
4. Brief statement of problem or event;
5. Anticipated impacts; and
6. Corrective action taken or recommended.

The Special Status Report should document the incidents listed below:

1. Developments that have a significant favorable impact on the project.
2. Problems, delays, or adverse conditions which materially impair the recipient's ability to meet the objectives of the award or which may require DOE to respond to questions relating to such events from the public. The recipient must report any of the following incidents and include the anticipated impact and remedial action to be taken to correct or resolve the problem/condition:
 - a. Any single fatality or injuries requiring hospitalization of five or more individuals.
 - b. Any significant environmental permit violation.
 - c. Any verbal or written Notice of Violation of any Environmental, Safety, and Health statutes.
 - d. Any incident which causes a significant process or hazard control system failure.
 - e. Any event which is anticipated to cause a significant schedule slippage or cost increase.
 - f. Any damage to Government-owned equipment in excess of \$50,000.
 - g. Any other incident that has the potential for high visibility in the media.
 - h. Any incident which causes a significant process or hazard control system failure, or is indicative of one which may lead to any of the above defined incidents, is to be reported as soon as possible, but within 5 days of discovery.

When an event results in the need to issue a written or verbal statement to the local media, the statement is to be cleared first, if possible, and coordinated with NETL Communications and Public Affairs Division, the DOE Project Officer and the Contracting Officer.

II. SCIENTIFIC/TECHNICAL REPORTING

Scientific/Technical Reporting includes: Final Scientific/Technical Report, Topical Reports, Journal Articles, Conference Proceedings and Papers, Software, and Conference Records.

FINAL SCIENTIFIC/TECHNICAL REPORT

The Final Scientific/Technical Report shall document and summarize all work performed during the award period in a comprehensive manner. It shall also present findings and/or conclusions produced as a consequence of this work. This report shall not merely be a compilation of information contained in other reports, but shall present that information in an integrated fashion, and shall be augmented with findings and conclusions drawn from the research as a whole.

TOPICAL REPORTS

Topical reports are intended to provide a comprehensive statement of the technical results of the work performed for a specific task or subtask of the Statement of Project Objectives, or detail significant new scientific or technical advances. If required, DOE shall review and approve the report outline prior to submission of the report.

These reports usually provide a comprehensive statement of the technical results of the work performed for a specific task or subtask of the Statement of Project Objectives, or detail significant new scientific or technical advances. If required, DOE shall review and approve the report outline prior to submission of the report.

Two Topical Reports (as a minimum) are required. The two required reports are the Preliminary Public

Design Report and the Final Public Design Report. The purpose of the Public Design Reports is to consolidate for public use all available nonproprietary design information on the project. The Preliminary Public Design Report is based on the preliminary design information and is due at the end of preliminary design. The Final Public Design Report is based on detailed design information and is due after completion of the Design Phase of the project, 60 days prior to completion of the Construction Phase of the project. The Final Public Design Report should contain sufficient background information to provide an overview of the project and pertinent cost data. Since the scope of the reports is limited to nonproprietary information, their content will not be sufficient to provide a complete tool in designing a replicate plant. However, these reports will serve as a reference for the design considerations involved in a commercial-scale facility.

The reports should include an overview description of the technology and a summary of the mass and energy balances for the process. They should also define the overall process performance requirements and describe the evaluations and operating philosophies upon which those performance requirements are based. A summary cost estimate of capital and operating costs and, if possible, an analysis of how costs could be improved for future commercial projects should also be included.

The following deliverables are also to be included as components of the Preliminary Public Design Report addressing the preliminary design:

Process Flow Diagrams

The Recipient shall provide a complete set of nonproprietary Process Flow Diagrams with all updates and modifications.

Stream Data

The Recipient shall provide a complete set of all nonproprietary stream data. This would include both the expected values and ranges of flows, stream properties, and constituents at various operating conditions.

Equipment List

The Equipment List consists of a summary of the major equipment for the plant. Equipment is to be sorted by Flow Diagram, equipment type, and equipment number. General description data are to be provided for each equipment item, including, but not limited to, the number required for operation, size or capacity, major nonproprietary operating and design parameters, and manufacturer and/or vendor.

The Final Public Design Report shall include the final versions of the Preliminary Public Design Report plus the following:

Drawings

The Recipient shall include a complete set of Equipment Plot and Elevation Drawings, and Process and Instrumentation Diagrams, which describe the plant configuration at the end of the demonstration period.

Plant Capital Cost Data

The Recipient shall include the data and documentation for all projected costs associated with the construction of the plant, with a breakdown which would permit this information to be used for projecting future plant construction costs.

Plant Operating Cost Data

The recipient shall include the data and documentation for all projected costs associated with the operation of the plant under conditions that represent reliable plant performance.

GUIDELINES FOR ELECTRONIC SUBMISSION AND ORGANIZATION OF FINAL SCIENTIFIC/TECHNICAL AND TOPICAL REPORTS

Electronic Submission. The final scientific/technical report and topical reports must be submitted electronically via the DOE Energy Link System (E-Link) at <http://www.osti.gov/eflink-2413>.

Electronic Format. REPORTS MUST BE SUBMITTED IN THE ADOBE PORTABLE DOCUMENT FORMAT (PDF) AND BE ONE INTEGRATED PDF FILE THAT CONTAINS ALL TEXT, TABLES, DIAGRAMS, PHOTOGRAPHS, SCHEMATIC, GRAPHS, AND CHARTS. ELECTRONIC REPORTS SUBMITTED IN A FORMAT OTHER THAN ADOBE WILL BE RETURNED AND THE REPORT CONSIDERED DELINQUENT. IN ADDITION, THERE CAN BE NO RESTRICTIONS ON THE PDF FILE SUBMITTED THAT WOULD AFFECT OUR ABILITY TO OPEN OR EDIT THE REPORT DOCUMENT. THEREFORE, THE ONLY SECURITY METHOD THAT WILL BE ACCEPTED IS THE ADOBE ACROBAT "NO SECURITY" OPTION. THIS WILL ENABLE US TO PROPERLY INDEX AND PROCESS REPORT FILES.

Materials, such as prints, videos, and books, that are essential to the report but cannot be submitted electronically, should be sent to the DOE Award Administrator at the address listed in Block 12 of the Notice of Financial Assistance Award.

Submittal Form. The report must be accompanied by a completed electronic version of DOE Form 241.3, "U.S. Department of Energy (DOE), Announcement of Scientific and Technical Information (STI)." You can complete, upload, and submit the DOE F.241.3 online via E-Link. You are encouraged not to submit Protected EAct Information in these electronic technical reports. These technical reports must also not contain any Limited Rights Data (such as trade secret, proprietary or business sensitive information), classified information, information subject to export control classification, or other information not subject to release. Such information **must** be submitted in a separate hard-copy appendix to the electronic technical and topical reports as explained under Supplemental Guidelines below.

Organization. The following sections should be included (as appropriate) in the final scientific/technical report and topical reports in the sequence shown. Any section denoted by an asterisk is **required** in all final technical and topical reports.

TITLE PAGE* - The Title Page of the report itself must contain the following information in the following sequence:

Report Title
Type of Report (Final Scientific/Technical or Topical)
Reporting Period Start Date
Reporting Period End Date
Principal Author(s)
Date Report was Issued (Month [spelled out] and Year [4 digits])
DOE Award Number (e.g., DE-FG26-05NT12345) and if appropriate, task number
Name and Address of Submitting Organization (This section should also contain the name and address of significant subcontractors/sub-recipients participating in the production of the report.)

DISCLAIMER* - The Disclaimer must follow the title page, and must contain the following paragraph:

"This report was prepared as an account of work sponsored by an agency of the United States Government. Neither the United States Government nor any agency thereof, nor any of their employees, makes any warranty, express or implied, or assumes any legal liability or responsibility for the accuracy, completeness, or usefulness of any information, apparatus, product, or process disclosed, or represents that its use would not infringe privately owned rights. Reference herein to any specific commercial product, process, or service by trade name, trademark, manufacturer, or otherwise does not

necessarily constitute or imply its endorsement, recommendation, or favoring by the United States Government or any agency thereof. The views and opinions of authors expressed herein do not necessarily state or reflect those of the United States Government or any agency thereof."

ABSTRACT* - should be a brief, concise summary of the report.

TABLE OF CONTENTS*

EXECUTIVE SUMMARY* - this should be a well organized summary that highlights the important accomplishments of the research during the reporting period. It should be no less than one page and no more than two pages in length, and should be single spaced. This summary must be more comprehensive than the traditional "abstract."

REPORT DETAILS - The body of the final scientific/technical or topical report should address topics such as the following:

Experimental methods: Describe, or reference all experimental methods being utilized. Also provide detail(s) about materials and equipment used. Standard methods should reference the appropriate literature, where details can be obtained. Equipment should be described only if it is not standard, or if information is not available thru the literature or other reference publications.

Results and discussions: This section should include enough relevant data, especially statistical data, to allow the project manager to justify the conclusions. Explain how the data was interpreted and how it relates to the original purpose of the research. Be concise in the discussion on how this research effort solved or contributed to solving the original problem.

Conclusion: The conclusion should not simply reiterate what was already included in "Results and Discussion" but should summarize what has already been presented, and include any logical implications of how the successes are relevant to technology development in the future. This is extremely important, since "relevancy" continues to be a criterion of the program.

GRAPHICAL MATERIALS LIST(S)

REFERENCES

BIBLIOGRAPHY

LIST OF ACRONYMS AND ABBREVIATIONS

APPENDICES (IF NECESSARY)

SUPPLEMENTAL GUIDELINES

Technical reporting SHALL NOT include Limited Rights Data (such as restricted, proprietary or business sensitive information). Limited Rights Data shall be submitted in a separate appendix to the technical report. This appendix SHALL NOT be submitted in an electronic format but rather submitted in ONE ORIGINAL AND THREE (3) PAPER COPIES along with the paper version of the sanitized technical report deliverable. The appendix shall not be referenced in or incorporated into the sanitized technical report deliverable under the contract. The appendix must be appropriately marked and identified. Further, if this award authorizes the awardee under the provisions of The Energy Policy Act of 1992 to request protection from public disclosure for a limited period of time of certain information developed under this award, technical reports SHALL NOT contain such Protected EAct Information. Such information shall be submitted in a separate appendix to the technical report that is suitable for release after the agreed upon period of protection from public disclosure has expired. The appendix shall not be referenced in or incorporated into the sanitized technical report deliverable under the contract. In accordance with the clause titled "Rights in data—programs covered under special data statutes," the appendix must be appropriately marked and identified

Company Names and Logos -- Except as indicated above, company names, logos, or similar material should not be incorporated into reports.

Copyrighted Material -- Copyrighted material should not be submitted as part of a report unless written authorization to use such material is received from the copyright owner and is submitted to DOE with the report.

Measurement Units -- All reports to be delivered under this instrument shall use the SI Metric System of Units as the primary units of measure. When reporting units in all reports, primary SI units shall be followed by their U.S. Customary Equivalents in parentheses (). **The Recipient shall insert the text of this clause, including this paragraph, in all subcontracts under this award.** Note: SI is an abbreviation for "Le Systeme International d'Unites."

JOURNAL ARTICLES, CONFERENCE PAPERS AND PROCEEDINGS GENERATED BY A SMALL BUSINESS OR NONPROFIT ORGANIZATION FOR DOE REVIEW

The Recipient shall submit to DOE for review and approval all documents generated by the Recipient, or any subcontractor, which communicate the results of scientific or technical work supported by DOE under this award, whether or not specifically identified in the award, prior to submission for publication, announcement, or presentation. Such documents include journal articles, conference papers and proceedings, etc. The Recipient shall submit a draft version of the document to the DOE Project Officer prior to the publication, presentation, or announcement. The DOE Project Officer shall review the draft version of the document and notify the Recipient of approval or recommended changes. The final version shall be submitted to the NETL AAD Document Control Coordinator.

The following information shall be provided for conference papers and proceedings, etc.

- Name of conference
- Location of conference (city, state, and country)
- Date of conference (month/day/year)
- Conference sponsor

CONFERENCE RECORD

The "Conference Record" documents for the DOE Project Officer, DOE Contracting Officer, and the Recipient an understanding of significant decisions, direction or redirection, or required actions resulting from meetings with DOE representatives. It is required for any meeting, conference, or phone conversation in which a decision is made that may change the schedule, labor, cost, or technical aspects of the award or the approved baseline plans. The report shall contain the following information as applicable:

1. Report title ("Conference Record"), number, and the date prepared.
2. Award title and number, and the Recipient's name and address.
3. Date of meeting or telephone conversation, with a list of those involved and their titles.
4. Subject(s) discussed, decisions reached, and directions given.
5. Variances from previous directions and conclusions.
6. Required actions.
7. Distribution.
8. Signature of preparer.

Electronic Submission. Scientific/technical conference paper/proceedings must be submitted electronically via the DOE Energy Link System (E-Link) at <http://www.osti.gov/mlink-2413>. Non-scientific/technical conference papers/proceedings must be sent to the NETL Intranet address at: FITS@NETL.DOE.GOV.

Electronic Format. Conference papers/proceedings must be submitted in the ADOBE PORTABLE DOCUMENT FORMAT (PDF) and be one integrated PDF file that contains all text, tables, diagrams, photographs, schematic, graphs, and charts.

Submittal Form. Scientific/technical conference papers/proceedings must be accompanied by a completed DOE Form 241.3. The form and instructions are available on E-Link at <http://www.osti.gov/clink-2413>. This form is not required for non-scientific or non-technical conference papers or proceedings.

III. FINANCIAL REPORTING

FINANCIAL STATUS REPORT (STANDARD FORM 269 OR 269A)

This report is used for the Recipient to provide regular periodic accounting of project funds expended. The accounting may be on either a cash or accrual basis. Actual total expenditures and obligations incurred, but not paid, are reported for each reporting period for each major activity. Provision is made to identify the Federal and non-Federal share of project outlays for each identified activity.

IV. CLOSEOUT REPORTING

PATENT CERTIFICATION (DOE F 2050.11)

This certificate submitted on DOE F 2050.11 is due immediately upon completion or termination of the award.

PROPERTY CERTIFICATE (NETL F 580.1-9)

This certificate submitted on the NETL F 580.1-9 is due immediately upon completion or termination of the award. The recipient must attach to this certificate a final/completion inventory of all recipient acquired real estate, equipment, and materials/supplies as specified in the appropriate 10 CFR 600 Financial Assistance Regulation.

V. OTHER REPORTING

ENVIRONMENTAL REPORTS

In response, in part, to the requirements of the National Environmental Policy Act of 1969 (NEPA) and other related environmental statutes, the National Energy Technology Laboratory (NETL) requires the submission of various documents that assess the environmental aspects and projected impacts of all of its proposed actions. These documents may include the following: (1) Environmental Compliance Plan, (2) Environmental Monitoring Plan, and (3) Environmental Status Reports.

The environmental information provided in these documents will enable NETL to fulfill its responsibilities under NEPA (additional information about the requirements of the National Environmental Policy Act can be found in the DOE NEPA Compliance Guide and 10 CFR 1021) and to monitor the Recipient's compliance with other environmental regulations. The implementation of any task associated with a proposed action will be dependent upon DOE completing necessary NEPA documentation. Therefore, to minimize the risk of project delays, it is imperative that these reports be submitted in a timely manner.

The information contained herein specifies the basic environmental requirements for this award, but it is not to be interpreted as containing all necessary information for any given project. Likewise, certain aspects of the requirements may not be applicable. Accordingly, the level of information provided should be sufficient for DOE to assess the environmental implications of the proposed action.

A. ENVIRONMENTAL COMPLIANCE PLAN

The Environmental Compliance Plan (ECP) should outline an approach to implementing an environmental monitoring and reporting strategy. This strategy should include plans for submitting a Quality Assurance/Quality Control Plan and Pollution Prevention Plan (if an ECP is

required, the format of the QA/QC Plan and Pollution Prevention Act will be determined in conjunction with the NETL environmental staff), conducting environmental monitoring of the proposed action and submitting Environmental Status Reports. The ECP should also address any concerns and/or deviations associated with the reporting and monitoring documents.

SUGGESTED FORMAT FOR ENVIRONMENTAL COMPLIANCE PLAN (ECP):

- I. SUMMARY OF PROPOSED PROJECT
- II. FEDERAL REGULATORY COMPLIANCE (Discuss how each of the following will be complied with, if applicable.)
 - A. National Historic Preservation Act
 - B. Endangered Species Act
 - C. Fish and Wildlife Coordination Act
 - D. Floodplain/Wetlands Regulations
 - E. Coastal Zone Management Act
 - F. Farmland Protection Policy Act
 - G. American Indian Religious Freedom Act
 - H. Wild and Scenic Rivers Act
 - I. Resource Conservation & Recovery Act
 - J. Comprehensive Environmental Response, Compensation and Liability Act
 - K. Clean Air Act
 - L. Clean Water Act
 - M. Pollution Prevention Act
- III. STATE AND LOCAL REGULATORY COMPLIANCE (Discuss how any state and local regulations will be complied with.)

B. ENVIRONMENTAL MONITORING PLAN

IF DOE's analysis of the potential environmental impacts of the proposed action identifies a need for environmental monitoring, the Recipient will also submit a draft Environmental Monitoring Plan (EMP) within thirty (30) days of award. After consultation with DOE, the draft EMP will be revised, as necessarily and a final EMP will be prepared. The EMP may be revised as the project dictates.

The EMP should evaluate air, land, and water resources, and waste production, using three specific types of monitoring:

- A. Compliance Monitoring,
- B. Unregulated Pollutant Monitoring, and, if necessary,
- C. NEPA-related Monitoring.

Compliance monitoring, i.e., environmental and health monitoring required by Federal, State, and local regulatory agencies, should detail the location, frequency, duration, and substances being monitored. All necessary applications, permits, and licenses should be identified.

Unregulated pollutants, both the amount and type of each, should be monitored. This includes those pollutants (a) not currently regulated by State or Federal laws but for which new regulations are expected in the near future; (b) which may cause environmental or health concerns based on hazardous/toxic compound lists; and (c) which are expected in discharge streams based on test data or process chemistry.

Finally, NEPA-related monitoring should be implemented as necessary. It should identify and/or

confirm the impacts of the substances produced and performance of the specific technologies as predicted in the NEPA document. It should also include reporting on any mitigation action identified in the Finding of No Significant Impact or Record of Decision as a condition of approval of the proposed action (reported annually).

C. ENVIRONMENTAL STATUS REPORT

After approval of the comprehensive EMP, and as deemed necessary by the DOE Project Manager, information from environmental monitoring should be submitted in the form of Environmental Status Reports (ESRs). The necessity of these reports will depend on the size and nature of the project; they will be required quarterly

The data reported in the ESRs will ensure that project impacts (a) do not violate applicable environmental regulations and (b) are not detrimental to human health or the environment. The information will also provide a database that can be utilized to mitigate environmental problems associated with commercializing any proposed technologies.

SUGGESTED FORMAT FOR ENVIRONMENTAL STATUS REPORTS

I. SUMMARY OF MONITORING PERFORMED (Compliance and Supplemental Monitoring)

A. MONITORING PARAMETERS

1. Location
2. Stage of Project (e.g., preconstruction, operational, etc.)
3. Source to be Monitored (e.g., stack emissions)
4. Method of Monitoring

B. DATA ANALYSIS

1. Identification/characterization of emissions, effluents, etc. and their concentration
2. Identification of problem areas/non-compliance
3. Suggestions for modifications/changes to the system
4. Recommendations to revise Monitoring Plan

II. PERMIT COMPLIANCE STATUS

- A. Attach copies of compliance reports, analyses, correspondence between the recipient and the appropriate regulatory agencies.
- B. Attach copies of all manifests, shipping documents, etc. pertaining to the disposal of Wastes generated from the project.

COMMUNICATION PLANS (MAR 2002)

Knowledge dissemination is an integral part of the Federally funded RD&D process. Effective dissemination requires planned, active, and coordinated participation of governmental entities and funded research organizations.

To ensure the effective dissemination of knowledge gained during this RD&D project, the recipient will consult with NETL's Public Affairs staff to identify communication goals, objectives, and strategies. The recipient will make an initial contact for consultation within 30 days of the award date. The recipient will make subsequent contacts whenever progress on the project warrants external communication, but no less than once a quarter.

Actions and products designed to disseminate nonproprietary project-related knowledge will be coordinated

with NETL's Public Affairs staff. Examples of such actions and products include, but are not limited to:

- Press releases
- Articles in newspapers, newsletters, and magazines
- Papers in peer-reviewed journals
- Radio, television, and newspaper interviews
- Presentation of research results at conferences, workshops, and seminars
- Publication of results on webpages
- Information for government officials

POST-COMPLETION REVIEW (MAR 2002)

Within two (2) years after completion of the demonstration project, the Recipient agrees to participate with DOE in a post-completion project review meeting. The time and location of the meeting will be established by agreement of the Parties. The purpose of the meeting is to review the success of the project as well as any problems that may have arisen since project completion.

ATTACHMENT C – BUDGET PAGE(S)

ATTACHMENT D – INSTRUCTIONS FOR COMPLETION OF INVOICES

(a) Voucher Form (SF 270)

In requesting reimbursement, recipient shall use Standard Form 270 (Request for Advance or Reimbursement). Electronic versions of the SF270 can be found on the NETL web site at <http://www.netl.doe.gov/business/index.html>. The invoice shall be supported by the information contained below.

All invoices shall include the following information:

- (1) Name and address of recipient/vendor
- (2) Invoice date
- (3) Award number or other authorization for delivery of property or service
- (4) Description, price and quantity of property and services actually delivered or rendered
- (5) Shipping and payment terms
- (6) Name (where practicable), title, phone number and complete mailing address of responsible official to whom payment is to be sent (must be the same as that in the contract or in a proper notice of assignment)
- (7) Name (where practicable), title, phone number and complete mailing address of the person to be notified in the event of a defective invoice.
- (8) Other substantiating documentation or information as required by the award.

The SF 270 shall be completed so as to make due allowances for the Recipient's cost accounting system. The costs claimed shall be only those recorded costs (including cost sharing) which are authorized for billing by the payment provisions of this award. Any cost sharing or in-kind contributions incurred by the Recipient and/or third party during the billing period must be included in the invoice and adequately supported. Indirect rates claimed shall be billed in accordance with the applicable Indirect Rate Contracting Officer approved rate(s) for the invoice period. The Certification (block 11) must be signed by a responsible official of the Recipient.

(b) Supporting Documentation

Direct costs (e.g., labor, equipment, travel, supplies, etc.) claimed for reimbursement must be adequately supported. The level of detail provided must clearly indicate where the funds were expended. For example, support for labor costs must include the labor category (e.g., program manager, senior engineer, technician, etc.) the hourly rate, and the labor cost per category; equipment costs must be supported by a list of the equipment purchased, along with the item's cost; supporting data for travel must include the destination of the trip, number and labor category of travelers, transportation costs, per diem costs, and purpose of the trip; and supplies should be categorized by the nature of the items (e.g., office, lab, computer, etc.) and the dollar amount per category. Other direct costs and/or subcontract costs incurred must also be categorized and detailed, with each subcontractor named along with their costs incurred during the billing period.

Indirect rates used for billings must be clearly indicated, as well as their basis of application. When the cognizant Indirect Rate Contracting Officer approves a change in the billing rates, include a copy of the approval.

(c) Billing Period Vouchers shall be submitted no more frequently than bi-weekly.

(d) Defective Invoices Invoices that are determined to be defective, and therefore not suitable for payment, shall be returned to the Recipient as soon as practicable, specifying the reason(s) why the invoice is not proper.

ATTACHMENT E – REPAYMENT AGREEMENT

REPAYMENT AGREEMENT

DE-FR26-06NT42386

In consideration of the United States Department of Energy (DOE) support for a clean coal technology demonstration project under DOE's Clean Coal Power Initiative, for which MEP-I LLC (defined herein as the "Obligor") acknowledges it will receive substantial benefit, the Obligor hereby agrees to repay the DOE in accordance with the terms and conditions set forth below.

ARTICLE I. GENERAL OBJECTIVE

The purpose of this Repayment Agreement is to set forth the terms and conditions under which the Obligor shall repay to DOE an amount up to, but not to exceed, the DOE Share paid under Cooperative Agreement Number DE-FC26-06NT42385.

ARTICLE II. DEFINITIONS

"Cooperative Agreement" means the financial assistance award made by the DOE to MEP-I LLC, (herein the "Obligor") - Instrument Number DE-FC26-06NT42385 on March 31, 2006 and subsequent amendments.

"DOE Share" means the portion of the Total Project Costs paid by DOE under the Cooperative Agreement.

"Notice to Proceed" means the authorization provided by the Obligor, to the Engineering, Procurement and Construction (EPC) contractor for the Mesaba Energy Project to proceed with work under the EPC contract.

"Obligor" means MEP-I, LLC, the organization that is responsible for repayment under this Repayment Agreement. Obligor includes the organization's successors and assigns.

"Repayment Period" means the period of time during which the Obligor is required to make payments under this Repayment Agreement.

"Total Project Costs" means the total amount of allowable direct and indirect costs incurred and paid, in part, by DOE under the Cooperative Agreement.

ARTICLE III. REPAYMENT PERIOD

(A) The Repayment Period for the DOE Share drawn during Budget Period 1 shall be as set forth in Articles V (A).

(B) The Repayment Period for the DOE Share drawn during Budget Period 3 shall begin at the end of Budget Period 3 of the Cooperative Agreement. However, if the Obligor withdraws or terminates its participation under the Cooperative Agreement during Budget Period 3, or the project is terminated in accordance with Paragraph 2.34 (Termination) of the Cooperative Agreement during Budget Period 3, the Repayment Period shall begin on the date the Obligor withdraws or the Cooperative Agreement is terminated. This Repayment Period shall expire 20 years after the Repayment Period begins or on the date the entire DOE share has been repaid, whichever occurs first.

(C) This Repayment Agreement may be terminated upon a determination by the Secretary of Energy or designee that repayment places the Obligor at a competitive disadvantage in domestic or international markets.

ARTICLE IV. BASIS FOR REPAYMENT

(A) The DOE Share drawn during Budget Period 1 will be repaid from project financing in accordance with the schedule set forth in Article V (A). Such repayment shall be due without regard to: (1) Obligor's withdrawal from the cooperative agreement prior to the date of issuance of the Notice to Proceed; or, (2) termination of the Cooperative Agreement by mutual consent or for cause, prior to the date of issuance of the Notice to Proceed.

(B) The DOE Share drawn during Budget Periods 3 will be repaid in equal annual installments from Obligor's funds in accordance with the schedule set forth in Article V (B).

(C) In the event Obligor sells or otherwise assigns its interest in the Mesaba Energy Project, Obligor agrees to make such sale or assignment subject to the purchaser or assignee's assumption of Obligor's obligations under this Repayment Agreement.

ARTICLE V. SCHEDULE OF REPAYMENTS

(A) Payment to DOE of the full amount of the DOE Share funded during Budget Period 1 of the Cooperative Agreement shall be due within 30 days after the date of issuance of the Notice to Proceed.

(B) Payment to DOE of the DOE Share funded during Budget Periods 3 of the Cooperative Agreement shall be due in equal annual payments over a 20 year period, within 30 days after the end of each one-year period following the start of the Budget Period 3 Repayment Period as defined in Article III (B).

(C) Repayment checks shall be made payable to the U.S. Department of Energy and mailed to Financial Management Division, US DOE NETL, 626 Cochran Mill Road, Pittsburgh, PA 15236-0940.

ARTICLE VI. REPORTING AND RECORD RETENTION REQUIREMENTS

(A) Annual Report to DOE

For Repayment due under Article V (B), within 60 days after the end of each one-year period, the Obligor shall submit a written report to DOE which, for the one-year period just elapsed, provides the total amount paid to DOE for all years, and the amount of the DOE share remaining to be paid in succeeding years under this Repayment Agreement.

(B) Commercialization Report

For 5 years after completion of the demonstration project, the Recipient shall submit a Commercialization Report describing the Recipient's (and team members') progress and success in commercializing the technology used during the project as well as technology derived from that used during the project. The purpose of the Commercialization Report is to assist DOE to determine the benefits obtained from Government support of technology development. The Commercialization Report is independent from the Annual Report required by the Repayment Agreement and is not limited to the sale or licensing of "demonstration technology" as that term may be defined in this Repayment Agreement. The Commercialization Report shall include a discussion of the Recipient's and its team members' efforts to commercialize the technology. The Commercialization Report shall also include descriptions and locations (or proposed locations) of all significant technology, embodied in the demonstration project or derived from technology embodied in the demonstration project, that was sold or licensed during the preceding year (whether or not such transaction were subject to repayment under the terms of the Repayment Agreement). The Commercialization Report shall also include a discussion of any impediments to the commercialization of the technology. The Commercialization Report shall be due on December 31 of each year.

(C) Period of Retention

With respect to each annual report to DOE, the Obligor shall retain, for the period of time prescribed in this paragraph, all related financial records, supporting documents, statistical records, and any other records the Obligor reasonably considers to be pertinent to this Repayment Agreement. The period of required retention shall be from the date each such record is created or received by the Obligor until three years after one of the following dates, whichever is earlier: the date the related annual report is received by DOE; or the date this Repayment Agreement expires, or the final payment to DOE is received. If any claim, litigation, negotiation, investigation, audit, or other action involving the records starts before the expiration of the three-year retention period, the Obligor shall retain the records until such action is completed and all related issues are resolved, or until the end of the three-year retention period, whichever is later. The Obligor shall not be required to retain any records which have been transmitted to DOE by the Obligor.

(D) Authorized Copies

Copies made by microfilm, photocopying, or similar methods may be substituted for original records. Records originally created by computer may be retained on an electronic medium, provided such medium is "read only" or is protected in such a manner that the electronic record can be authenticated as an original record.

(E) Access to Records

DOE and the Comptroller General of the United States, or any of their authorized representatives, shall have the right of access to any books, documents, papers, or other records (including those on electronic media) which are pertinent to this Repayment Agreement. The purpose of such access is limited to the making of audits, examinations, excerpts, and transcripts. The right of access described in this paragraph shall last as long as the Obligor retains records which are pertinent to this Repayment Agreement.

(F) Restrictions on Public Disclosure

The Federal Freedom of Information Act (5 U.S.C. Section 552) does not apply to records the Obligor is required to retain by the terms of this Repayment Agreement. Unless otherwise required by law or a court of competent jurisdiction, the Obligor shall not be required to disclose such records to the public.

(G) Flow Down of Records, Retention, and Access Requirements

Obligor shall include clauses substantially similar to the records retention and access requirements set forth in sections (C) and (E) of this Article in all agreements when necessary to fulfill the Obligor obligations under this Repayment Agreement.

ARTICLE VII. DEFAULT

If the Obligor fails to make payment within the time specified in Article V or submit the annual report within the time specified in Article VI, the Obligor shall be in default of this Repayment Agreement. If the Obligor fails to cure the default within 30 days after receipt of notice of the default from DOE, notwithstanding any provision of the Cooperative Agreement or Repayment Agreement to the contrary, the total unpaid amount of the DOE share shall be immediately payable to DOE.

ARTICLE VIII. DISPUTES

Disputes arising under this Repayment Agreement shall be subject to the procedures set forth in 10 CFR 600.22 Disputes and Appeals.

UNITED STATES DEPARTMENT OF ENERGY

Signature: _____
Name:
Title: Contracting Officer

Date

OBLIGOR (MEP-I LLC)

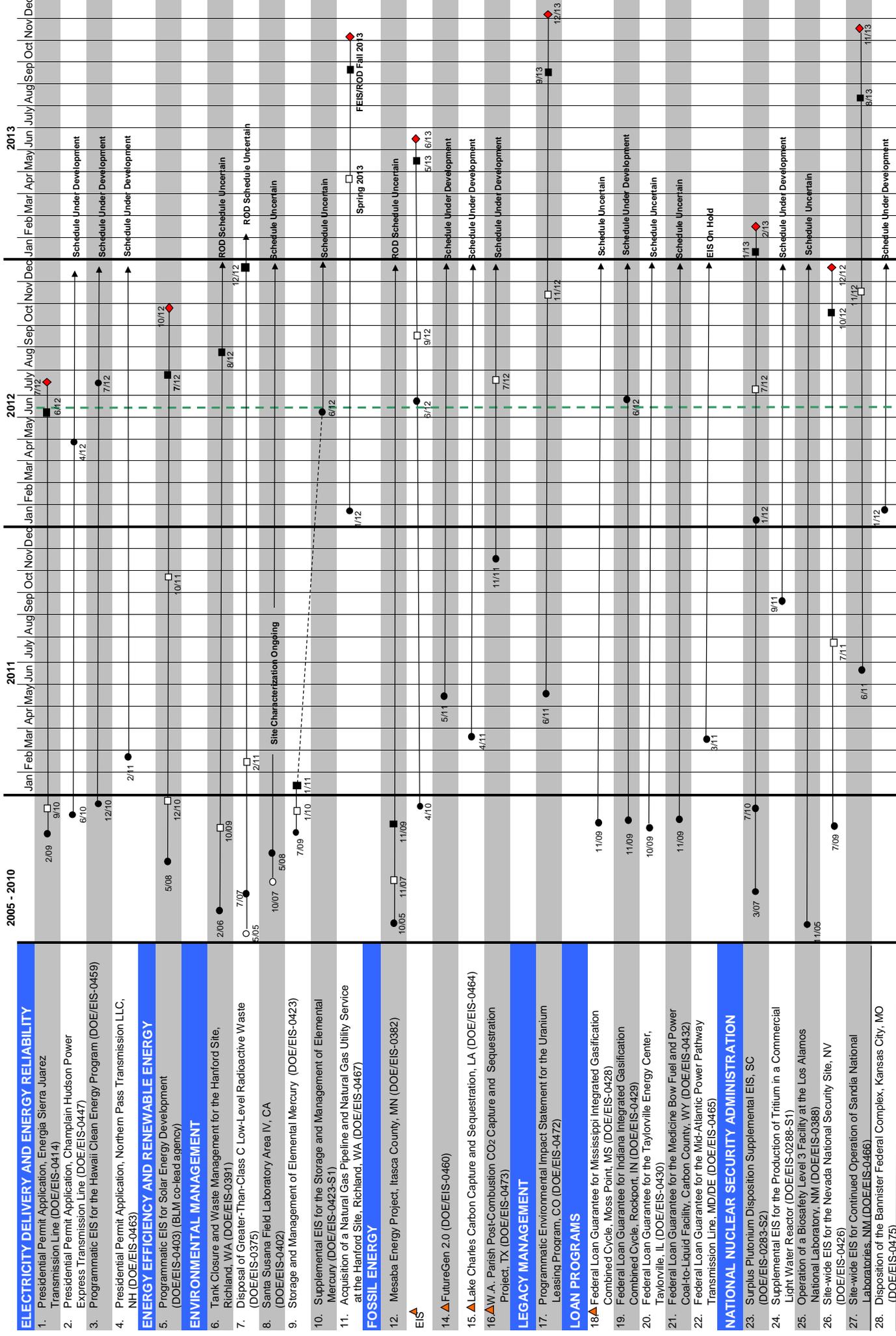
Signature: _____
Name:
Title:

Date

Exhibit D

DOE Schedule of Environmental Review

SCHEDULES OF KEY ENVIRONMENTAL IMPACT STATEMENTS*



June 15, 2012

Legend

- Advance Notice of Intent (ANDI)
- Notice of Intent (NOI)
- Draft EIS (DEIS)
- Final EIS (FEIS)
- ◆ Record of Decision (ROD)
- ▲ Recovery Act

*Does not include Power Marketing Administrations Environmental Impact Statements